

***United States Court of Appeals
for the
District of Columbia Circuit***



**TRANSCRIPT OF
RECORD**

BRIEF FOR APPELLANT

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 14,417

LEWIS A. SIEGEL,

Appellant,

v.

371

ROBERT C. WATSON,
COMMISSIONER OF PATENTS,

Appellee.

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

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August 15, 1958

*United States Court of Appeals
For the
District of Columbia Circuit*
FILED
AUG 14 1958
Fryd W. Stewart
CLERK

STATEMENT OF QUESTIONS PRESENTED

1. A first question is whether the Siegel invention, Vibration Variation Control, meets the statutory criteria for a patentable invention where the record affirmatively shows that it has advanced the useful arts and was not obvious to one skilled in the art.

2. A second question is whether four prior patents to Jearum, Bailey, Plimmer, and Coleman or Foreign publication by Paul Grodzinski teaching "Trial and Error", anticipate the Siegel invention where the record shows the prior art to be structurally quite different from the Siegel invention and inventions that could not be used for such a purpose, and where the prior art contains no disclosure of the problem solved by Siegel's invention nor suggests its solution.

3. A third question is whether the Siegel claims on appeal are patentable over the prior art, where such claims are to a "combination" and also distinguish in terms from the prior art disclosure which limits the claim to the art of diamond cutting responsive to vibrations of workpiece.

4. A fourth question is whether the Trial Court erred (1) in failing to give proper weight to extensive evidence before it, and not before the Patent Office, on the practical problem with which the art was confronted, its solution by the Siegel invention, and the failure of the prior art to realize the problem or teach its solution; and (2) in holding, in spite of such additional evidence, "there is a presumption that the Patent Office is right."

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ROBERT C. WATSON,
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BRIEF FOR APPELLANT

JURISDICTIONAL STATEMENT

This action was brought in the Court below, under the provisions of Title 35, U. S. Code, Section 145 (Act of July 19, 1952, c. 950, Sec. 1; 66 Stat. 803), to authorize the Commissioner of Patents to issue a patent to Lewis A. Siegel on an application filed April 1, 1950, for "Vibration Variation Control". This appeal is taken under the provisions of Title 28, U. S. Code, Sections 1291, 1294 (Act of June 25, 1948, c. 646; 62 Stat. 929, 930), from the Judgment of the Court below dated December 4, 1957, dismissing the Complaint (J..A.. 21)*.

* For the sake of brevity, references to the Joint Appendix filed herein are designated "J. A. ____".

STATEMENT OF THE CASE

A. THE INVENTION IN ISSUE

The Siegel invention here involved relates to a method and apparatus for cutting, grinding, lapping or polishing diamonds. The diamond to be cut is presented to a rotating diamond cutting disc in a certain direction relative to the "cutting grain" of the diamond in order that the diamond may be cut. When the diamond is being ground in this direction, a different vibration is produced than when the diamond is presented to the grinding means at some other angle. This difference is used to align the diamond in a cutting direction relative to the diamond cutting disc and to keep the diamond and the diamond cutting disc in this relationship.

This is accomplished by connecting a microphone (transducer) to the diamond holding means and causing a current to flow through the microphone. The current will vary in amount with the degree of vibration of said diamond holding means. This current is passed through an ammeter, which shows the amount of current flowing. The needle of the ammeter is the means for opening or closing an electric power circuit which may: (1) drive an electric motor which rotates the diamond holder (Dop); (2) actuate a solenoid latch to cause the diamond to be lifted out of engagement with said diamond cutting disc; or (3) drive an electric motor which causes the rotating diamond cutting disc to move in a planetary path around the diamond being cut while maintaining cutting contact with said diamond.

The rationale is more fully disclosed in Exhibit 1 (J. A. 32-37).

In Contrast With The Prior Art Universally Used

Prior art referred to are methods used today, almost eight years after Plaintiff filed his patent application in the United States Patent Office,

(1) Employment of workers with many years of acquired skill, who

- (2) by continuously placing a diamond against a diamond cutting disc in a different position and moving said diamond for examination, determine,
- (3) by trial and error the cutting grain position of the diamond,
- (4) not necessarily optimum cutting grain position of the diamond,
- (5) highly skilled workers continuously interrupt cutting of diamond by removing same from diamond cutting disc for examination to determine if the diamond is still being cut by the diamond cutting disc.

Among the real shortcomings of the prior art, the following are most important:

- (1) It is difficult to find the grain.
 - (2) In one surface several grains may be present.
 - (3) It is impossible to find grain by control and observation.
 - (4) The actual polishing direction must be determined by trial and error.
 - (5) There is no scientific measure for the degree of polishing.
- (J. A. 85-89).

These shortcomings cause damage to the machine by cutting a groove in the diamond cutting disc when the diamond is not properly oriented with respect to its cutting grain against the diamond cutting disc, thereby spoiling said diamond cutting disc; (2) cause a great loss of time in determining the cutting grain, sometimes involving weeks or months; (3) require highly skilled workers; (4) require continuous manual control and attention.

With the foregoing shortcomings in the diamond cutting art, Mr. Siegel proceeded counter to the teachings of the prior art. (J. A. 83-90).

- (1) It is impossible to determine the cutting grain by control and observation.
- (2) Instrumentation was not possible because of various types and sizes of diamonds.
- (3) Trial and error was the only way to determine the cutting grain of a diamond.

The Present Invention

Ascertains vibrations of a workpiece having a grain structure permitting cutting of said workpiece in a specific direction only, and controls the cutting of a diamond by electro —mechanical means in preference to tactile, auditory, and visual senses utilizing trial and error. (J. A. 43-43; Exhibit 1, J. A. 32-37).

This "Vibration Variation Control" overcame all the shortcomings of the prior art described above after proceeding down a path contrary to all teachings of the prior art (Appellant's Brief before the Court below, J. A. 83-90).

Advantages

- (1) Eliminate many years of acquired skill to cut a diamond.
- (2) Lower cost of both gem and industrial diamonds (cutting).
- (3) Increase life span of diamond cutting disc on diamond cutting machine by disengaging diamond from diamond cutting disc when the cutting grain of diamond is no longer oriented with respect to said diamond cutting disc, in which case the diamond would cut the diamond cutting disc, thereby spoiling the diamond cutting disc instead of being cut by said disc.
- (4) Eliminate periodic removal from the diamond cutting disc to ascertain if the grain has changed once it was found.
- (5) Provide continuous and automatic grain determination of a diamond subject to a machining operation.
- (6) Facilitate learning the cutting grain direction of a diamond and to control the cutting of a diamond by electro-mechanical means in preference to tactile, auditory and visual senses in trial and error manner.
- (7) Determine proper orientation of a diamond for setting in a tool bit, where incorrect positioning will subject diamond to shattering.

The Vibration Variation Control devised by Mr. Siegel was definitely an advancement of the useful arts.

B. THE CLAIMS IN ISSUE

While it is clear from the foregoing that Siegel has made an important contribution to the diamond cutting art which represents invention, it is recognized that the real test of patentability is whether the claims of the application define that invention in a way to distinguish from the prior art. It is submitted that in this case they do.

There are in issue eight claims to the Siegel diamond cutting machine and six claims to the Siegel method of cutting diamonds (J. A. 40-42). Three claims are herewith dropped from the case -- Claims 46, 58 and 68. Eleven apparatus claims and three method claims were held allowable and granted by the Examiner (J. A. 94-97).

Apparatus and method claims 21, 43, 49, 50 and 44, 45, 55, 59 and 67 were rejected by the Examiner and the Board of Appeals in two groups on a vague reference to sound in a foreign publication and a prophetic reference to sound in a "paper" patent so that only a representative claim need be considered in detail. The Board of Appeals considered claim 21 as "representative" (J. A. 56) of the apparatus claims and that selection is accepted. That claim, broken down into its essential separate features, reads as follows:

CLAIM 21:

- (1) A diamond cutting and polishing machine comprising a
- (2) diamond cutting disc on which the diamond bears a
- (3) dop-holder for holding a
- (4) dop which bears a diamond against said
- (5) diamond cutting disc, a
- (6) vibration indicating means adapted to close an
- (7) electric circuit to an
- (8) electric motor which when energized rotates the
- (9) dop held in said

- (10) dop holder, to a position where cutting grain of diamond is presented to
- (11) cutting disc, causing increased vibration of
- (12) dop holder, which actuates
- (13) vibration indicator, which opens
- (14) electric circuit to
- (15) motor causing motor to stop rotation of
- (16) dop and leaving diamond on cutting grain position against
- (17) cutting disc.

The structure and function of the specific structures recited are more "broadly" defined in allowed claims granted by the Examiner (J. A. 94-97).

Claims 1, 7, 51, 53, rejected on other prior art, cover the elements of claim 21 above in a little broader terms, however, not broader than the allowed claims in this case.

Claim 56 is a method claim and can be practiced on the above disclosed structure; it cannot be practiced on the Bailey patent, therefore it only reads on Bailey verbally, if at all.

Appellant would like to represent rejected method claims with claim 59 since its scope is comparable with allowed method claims (J. A. 96-97).

CLAIM 59:

- (1) Frictionally exciting diamond by placing a portion thereof in contact with a rotating surface,
- (2) measuring by instrumentation vibrations executed by said diamond on being thus excited,
- (3) rotating said diamond with respect to said surface, and
- (4) ascertaining the position of said diamond in which said vibrations are a maximum.

C. THE PRIOR PROCEEDINGS

The proceedings leading up to this appeal are quite unusual. The Examiner, in the Examiner's Statement of May 13, 1953 (J. A. 47-48), presented a fallacious concept of appellant's invention to the Board of Appeals, indicating that the instant invention is dependent on "sound" more fully exemplified at J. A. 73-74, as well as a fallacious concept with respect to Coleman's patent No. 1,168,858, suggesting instant invention by vague prophecies (J. A. 52), and a fallacious construction placed on a foreign publication, "Diamond And Gem Stone Industrial Production," by Paul Grodzinski (J. A. 62-63). The Board of Appeals relied on the same references and the same reasons expressed by the Examiner, they so stated, in their Decision on Petition For Reconsideration, mailed June 28, 1954 (Paper No. 20, J. A. 65).

The Examiner, in spite of his holding in Examiner's Statement (Paper No. 14, mailed May 13, 1953; J. A. 47):

"The finding of the grain or the correct orientation of the particular surface of the diamond has been a time-consuming matter and one requiring considerable specialized skill * * *"

and his allowing some fourteen claims to both the apparatus and method (J. A. 94-97), rejects instant claims before this Court, some of which have greater "structural" as well as "functional" limitations, thereby distinguishing even more over the prior art than broader claims held allowable.

The Board of Claims (Exhibit 1, J. A. 55-64) affirmed the rejection of all claims before this Court in spite of their finding:

"* * * We find it unnecessary to discuss Appellant's arguments in detail since it may readily be conceded that the Bailey and Plimmer Patents are not directed to the problem with which Appellant is concerned." (J. A. 58).

"* * * We think appellant's argument is sound insofar as claim 7 is concerned.* * *" (J. A. 59)

With respect to claim 51, the Board of Appeals held:

"While the diamond is mentioned in this claim, it is not recited as an element of the machine but even if it were we see nothing objectionable under the facts of this case in the recitation of means responsive to the vibrations of the diamond for controlling the position of the cutting disc on its planetary axis since it is the vibration of the diamond which produces the control force. It is not readily apparent how else the control could be defined than by reference to the vibrations of the diamond.* * *" (J. A. 61).

* * * * *

"* * * We do not agree with the Examiner's holding that the statement in the claim that the Vibration responsive means is responsive to vibrations of the work-piece is not a positive and proper recitation of the claimed machine,* * *" (J. A. 62)

* * * * *

"* * * These claims distinguish from the method taught in the publication either by reciting that the vibration is detected automatically or by instrumentation rather than by ear * * *" (J. A. 63)

* * * * *

"* * * Jearum has no means to stop the planetary movement at a predetermined place * * *" (J. A. 62)

The Court below in its Opinion (J. A. 13-20) did not disagree with the quoted finding of the Board of Appeals but effectively found that the evidence at the trial confirmed that finding, saying:

"* * * The patent to Plimmer, No. 1,891,777 * * * shows a grinding machine * * * for stopping * * * a grinding wheel * * * when * * * workpiece has been reduced to a predetermined size.* * *" (J. A. 17)

"* * * defendant concedes that the Plaintiff's apparatus and process were regarded as patentable inventions, * * *" (J. A. 15).

And at the hearing, the Court referred to the Bailey Patent in the following manner:

THE COURT: Bailey has nothing to do with grinding diamonds. (J. A. 7).

At the trial in the Court below, Mr. Miller conceded for the Patent Office that the Plaintiff has invention. (J. A. 27).

In the Brief for the Defendant, Mr. Behrans conceded for the Patent Office that the prior art procedure is "by trial and error". (J. A. 68).

In fact, there is a suggestion that the Court below did not understand the Siegel invention in its statement that

"This is a most difficult case which involves intricate and technical questions. * * *" (J. A. 20).

As developed more fully hereinafter, it is submitted that the Court below misapplied the law to the undisputed facts in that it (1) gave a near-conclusive effect to the conclusions of the Patent Office in spite of extensive new evidence offered at the trial showing such conclusions to be clearly erroneous; and (2) it followed the Board of Appeals' erroneous interpretation of the law on patentable inventions; (3) it followed the Board of Appeals' erroneous construction of the prior art and in effect thereby the Examiner's erroneous construing of said art.

Appellant does challenge erroneous construction placed on prior art, as well as erroneous construction placed on appellant's invention, and the misapplication of accepted legal principles to undisputed facts.

STATUTES INVOLVED

The determination of the issues on appeal requires the consideration of those Statutes defining the nature of patentable inventions and the conditions precedent to the grant of a patent and the Statute providing the instant remedy to an applicant dissatisfied with the holding of the Patent Office. The pertinent sections of the Patent Statutes (Title 35, U. S. Code) read as follows:

Section 101. Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the condition and requirements of this title.

Section 102(a). A person shall be entitled to a patent unless the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent in the United States, or

Section 102(b). The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.

Section 103. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Section 112. The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the

best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof. (Act of July 19, 1952, c. 950, Section 1; 66 Stat. 797, 798).

Section 145. An applicant dissatisfied with the decision of the Board of Appeals may, unless appeal has been taken to the United States Court of Customs and Patent Appeals, have remedy by civil action against the Commissioner in the United States District Court for the District of Columbia if commenced within such time after such decision, not less than sixty days, as the Commissioner appoints. The court may adjudge that such applicant is entitled to receive a patent for his invention, as specified in any of his claims involved in the decision of the Board of Appeals, as the facts in the case may appear and such adjudication shall authorize the Commissioner to issue such patent on compliance with the requirements of law. All the expense of the proceedings shall be paid by the applicant. (Act of July 19, 1952, c. 950, Section 1; 66 Stat. 803).

STATEMENT OF POINTS

Appellant relies upon the following points of error in the Opinion of the Court below (J. A. 13-20):

1. The Court below erred in holding that:

"There is a presumption that the Patent Office is right * * *" (J. A. 20).

2. The Court below erred in holding that:

"* * * evidence submitted by the plaintiff has not overcome the presumption 'by clear proof of mistake.' * * *" (J. A. 20).

3. The Court below erred in holding that:

"This is a most difficult case which involves intricate and technical questions. * * *" (J. A. 20).

4. The Court below erred in holding that:

"* * * The Patent Office has the equipment for deciding intricate and technical questions * * *." (J. A. 20).

5. The Court below erred in holding that, under the rule of

Robertson v. Cooper, 4 Cir., 46 F. 2d 766, 768

Esso Standard Oil Company v. Sun Oil Company,
97 U. S. App. D. C. 154, 157

Morgan v. Daniels, 1894, 153 U. S. 120, 125,
14 S. Ct. 772, 38 L. Ed. 657

there is a foundation or legal basis for points of error Numbers 1, 2, 3, and 4 above listed. (J. A. 20).

6. The Court below erred in holding that:

"* * * The statement in Coleman that the grain of a diamond may be determined by 'differences in sound produced' would suggest to those skilled in the art that a vibration responsive means disclosed by Plimmer could be substituted for the friction responsive means disclosed by Coleman without invention * * *" (J. A. 18).

7. The Court below erred in holding that:

"Claims 21, 43, 49 and 50 * * * are functional recitations of what plaintiff's device does rather than what it is. * * *" (J. A. 18).

8. The Court below erred in failing to find that the Siegel Vibration Variation Control has advanced the useful arts, that it was not obvious to one skilled in the art, and that it therefore meets the statutory criteria for a patentable invention.

9. The Court below erred in failing to find that the Bailey and Plimmer patents are not directed to the problem with which appellant is concerned, contain no disclosure of the problem solved by Siegel and fail to suggest its solution and, hence, that they do not anticipate that invention.

10. The Court below erred in failing to find that the foreign publication, "Diamond and Gem Stone Industrial Production," by Paul Grodzinski, N.A.G. Press Ltd., London 1942, does not describe or suggest appellant's Vibration Variation Control and as a foreign publication can only anticipate for what it actually describes, hence it does not anticipate instant invention before this Court.

11. The Court below erred in failing to find that Coleman in view of Plimmer does not suggest instant invention before this Court.

12. The Court below erred in holding that:

"Plaintiff takes the position that the last paragraph of the aforementioned Section sanctions the use in the claims of functional expressions of general results as distinctions over the prior art, or as adequate descriptions of the essential elements. * * *" (J. A. 15). Note: Re 35 U.S.C. 112.

13. The Court below erred in failing to find:

A Claim to a 'Combination' does not have to recite, positively the structure of the element, or the actual means. (J. A. 7, 15)

14. The Court below erred in holding: a

"Sound" and "vibration" coordinated terms.
(J. A. 19)

15. The Court below erred in failing to find claims 1, 7, 21, 43, 44, 45, 49, 50, 51, 53, 55, 56, 59 and 67 allowable over prior art cited by Patent Office.

16. The Court below erred in failing to find claims 1, 7, 21, 43, 44, 45, 49, 50, 51, 53, 55, 56, 59 and 67 allowable as proper statutory claims.

SUMMARY OF ARGUMENT

A. The Siegel Vibration Variation Control represents a worthy invention which has advanced the useful arts and one which was not obvious to one skilled in the art. The Siegel invention meets the statutory criteria for a patentable invention.

B. The prior art relied on by appellee are patents for sizing devices to Plimmer and to Bailey; a foreign publication, "Diamond and Gem Stone Industrial Production," and a patent to Coleman, a "paper" patent which received no commercial use. The patents describe physical structure quite different from Siegel's Vibration Variation Control and could not be used for this purpose. The publication and patents contain no disclosure of the problem to which the Siegel invention is directed and fail to teach or suggest its solution. The authorities uniformly hold that such references are not anticipations.

C. The claims on appeal are for a "combination" having "means" clause with other elements associated with said clause to adequately define the claimed invention.

D. At the trial in the Court below, Appellant introduced extensive evidence in addition to that before the Patent Office. That evidence gave the complete story of the practical problem with which the art was confronted, its solution by the Siegel invention, and the failure of the prior art patents and foreign publication to realize the problems or teach its solution. The Trial Court, erroneously construing the controlling authorities, failed to give proper weight to such additional evidence, actually deciding the case as though it were an appeal on the Patent Office Record only.

ARGUMENT

A. THE SIEGEL INVENTION HAS ADVANCED THE USEFUL ARTS AND MEETS THE STATUTORY CRITERIA OF A PATENTABLE INVENTION. (Points 8, 11, 15, 16)

As stated above, the prior art relevant to the Siegel invention teaches it is not possible to determine the cutting grain of a diamond by control and observation, because of different diamonds and their characteristics instrumentation can not be used, and the only way to determine the cutting grain of a diamond is by "trial and error" or to continuously rotate the diamond against the diamond cutting disc

depending on passing over the cutting grain periodically in each rotation of the diamond, which is described by the inventor Coleman as more "expeditious" and is the principle utilized in the Jearum machine.

The transition from trial and error to Siegel's Vibration Variation Control have been related above (pp. 2-5) and need not be repeated here. There can be no question but that the Siegel invention advanced the useful arts, the test set by the Constitution for determining a patentable invention (Article 1, Section 8).

This Court stated a test of patentability quite recently in the case of L-O-F Glass Fibers v. Watson, 1955, ___ App. D. C. ___, 228 F. 2d 40, 107 U.S.P.Q. 197:

"We are bound at first to look into the prior art to ascertain what may be the real merit of the invention and to decide whether or not it has substantially advanced the art. 'If it has done so, then the court is liberal in its construction of the patent to secure to the inventor the reward he deserves.' (Eibel Co. v. Paper Co., 261 U. S. 45, 63 (1923); Smith v. Coe, 294 U. S. 1, 14 (1935).) As did Eibel, Cook made a 'very useful discovery which has substantially advanced the art.' * * *"

Moreover, the Siegel invention meets the express criteria of Section 103 of the Patent Act (supra, p. 10) in that "as a whole" it would not "have been obvious at the time the invention was made to a person having ordinary skill in the art." In the light of the prior art, the Examiner allowed 14 claims to method and apparatus, the attorney for the Patent Office at the trial in the Court below conceded Appellant had invention, the attorney for the Patent Office, in the Brief for the Defendant, conceded for the Patent Office that the prior art is "by trial and error" (J. A. 68).

It is clear that it was unobvious to substitute a vibration sensitive means subject to the vibrations of a work-piece for a conventional hearing aid amplifying a very limited range of "sound" audible to man. It is simply unrealistic to hold unpatentable claims defining more structure over claims defining less structure of the same invention.

Furthermore, as brought out hereinafter (p. 20) the prior art patents to Bailey and Plimmer are found in an entirely different art and are directed to an entirely different problem. The differences between the Siegel structure, function and result are so great and so many that it cannot be said that such a departure from the prior art would have been obvious to one skilled in the diamond cutting art. This is equally true of the differences in Jearum, Coleman and the foreign publication, "Diamond and Gem Stone Industrial Production," with regard to Siegel's invention.

From the seeming contradictions found in the holdings of the Examiner, the Board of Appeals, and the Trial Court outlined above (pp. 7-9), it appears that each of these tribunals was disturbed by the simplicity of the Siegel invention when viewed from the hindsight of his disclosure and by doubt that anything so simple could be patentable. But this hindsight evaluation of invention has uniformly been rejected by the authorities. A classic case in point is Diamond Rubber v. Consolidated, (1911), 220 U. S. 428, which involved the famous Grant patent for a solid rubber tire for vehicles. In affirming the judgment of the lower courts sustaining the validity of the patent which covered a relatively simple modification of the disclosures of two prior patents showing rubber tires superficially resembling the patented tire but failing to solve the problem of lateral thrusts, the Court said:

"* * * Knowledge after the event is always easy, and problems once solved present no difficulties, indeed, may be represented as never having had any, and expert witnesses may be brought forward to show that the thing which seemed to have eluded the search of the world was always ready at hand and easy to be seen by a merely skillful attention. But the law has other tests of the invention than subtle conjectures of what might have been seen and yet was not. It regards a change as evidence of novelty, the acceptance and utility of change as a further evidence, even as demonstration. * * *" (p. 435).

This Court has followed the same rule in L-O-F Glass Fibers v. Watson, supra. In that case, in reversing the District Court and the Commissioner and authorizing the Commissioner to issue a patent on a claim for a glass heating apparatus, this Court said:

"* * * invention is not to be denied simply because, when 'Viewed after the event, the means * * * (may) seem simple and such as should have been obvious to those who worked in the field * * *.' (Goodyear Co. v. Ray-O-Vac Co., 321 U. S. 275, 279, 60 USPQ 386, 388 (1944).
* * *"

It is clear that the Siegel invention meets the statutory criteria of patentability.

- B. THE PRIOR ART COLEMAN, PLIMMER, BAILEY, AND JEARUM PATENTS AND FOREIGN PUBLICATION, "DIAMOND AND GEM STONE INDUSTRIAL PRODUCTION, " BY PAUL GRODZINSKI, DO NOT ANTICIPATE BECAUSE THEY CONTAIN NO DISCLOSURE OF THE PROBLEM SOLVED BY SIEGEL AND FAIL TO SUGGEST ITS SOLUTION. (Points 6, 8-11, 15)

The Bailey and Plimmer patents are sizing devices for grinding a work-piece to a predetermined size (J. A. 49-51) without any regard for the cutting grain direction of the work-piece as is necessary when cutting a diamond. Moreover, Appellant explained to the Board of Appeals that it was not possible to cut a diamond on either Bailey or Plimmer, therefore they were not proper references. The Board of Appeals then held, "We find it unnecessary to discuss appellant's arguments in detail since it may readily be conceded that the Bailey and Plimmer patents are not directed to the problem with which appellant is concerned." (J. A. 58). In addition to which, Mr. Siegel testified before the Court below that Bailey could not cut a diamond (J. A. 6) and Plimmer could not cut a diamond (J. A. 11). Moreover, the Court below held "Bailey has nothing to do with cutting diamonds" (J. A. 7).

But what is more important, the Bailey and Plimmer patents are directed to a problem totally different from that of Appellant Siegel and

do not actually represent the relevant prior art, as admitted by the Board of Appeals (J. A. 58).

As a matter of law, such disclosures in a non-analogous art, teaching nothing to the art to which the invention relates and failing to disclose the problem solved by applicant or its solution, fail to anticipate an invention embodying a solution of that problem. This Court has followed that rule in Marzall v. Switzer, (1952), ___ App. D. C. ___, 105 F. Supp. 841, 94 USPQ 1. In that case, in allowing claims to a process of dyeing textiles and to the resulting article, this Court said:

"* * * We can find nothing in the prior art which would lead one to suspect or to achieve the results of the present invention.

"It is unnecessary that we go further into detail. * * *"

It appears that the Coleman patent is a "paper" patent which made no commercial imprint in the diamond cutting art. The Board of Appeals in its rejection of appellant's claims before this Court relied on Examiner's erroneous statement of appellant's invention depending on "sound" level for control (J. A. 73-74). Furthermore, the Board of Appeals did not rely upon what Coleman described as his invention, but upon one of a number of vague prophecies (J. A. 70-71).

Mr. Siegel testified before the Court below that Coleman's machine did not measure vibrations and teaches it is more expeditious to continually rotate the diamond and periodically take advantage of the proper cutting grain direction, in contrast to appellant's selective cutting grain orientation (J. A. 11).

Any vague prophecies of the Coleman machine certainly did not suggest appellant's invention to anyone because that patent is over 42 years old and has been in the public domain for more than 25 years, and there have been many inventions purporting to determine the cutting grain of a diamond, none of which incorporated any alleged suggestions from Coleman's vague prophecies in their devices. In fact the same

inventor, Coleman, invented a diamond cutting machine for determining the cutting grain of a diamond which was not cited against the instant invention. This was Exhibit No. 5 (C. J. Coleman Patent No. 1,313,260, August 19, 1919) (J. A. 10) which did not utilize any alleged suggestion from his earlier machine, because there was none. Exhibit 5 was a depth gage device functioning on the principle of Exhibits 2 and 3 (E.F.A.C. Leperre Patent No. 1,458,768, June 12, 1923, Exhibit 2; and S. M. Schenkein and O.P.R. Lehmann Patent No. 1,166,006, December 28, 1915, Exhibit No. 3) (J. A. 8-9) which incidentally were for determining the cutting grain of a diamond and indicate the process of the work which were abandoned by the Patent Office as anticipations against appellant's invention as defined by his claims, after appellant personally, at a hearing with the Examiner, explained why these devices could not function and at best give a false reading. Any depth gage that will depend on the displacement of a diamond due to wear or abrasion of said diamond will register even if the diamond is not ground, because when a diamond is not properly oriented with respect to its cutting grain against a cutting disc, it will wear a groove into said cutting disc and depress therein, causing said depth gage to register anyway and give a false reading. It would appear the patent office did not have to go outside of the diamond cutting art for Bailey or Plimmer after abandoning devices right in the art.

Coleman in view of Plimmer does not suggest Appellant's invention because the transfer of any sizing mechanism from Plimmer would render Coleman as ineffective as an anticipation as those patents abandoned by the Patent Office, several more of which are listed in Plaintiff's Exhibit No. 1 - Paper No. 3, mailed Aug. 16, 1950 (J. A. 68).

Even the prophetic reference to "sound" in Coleman does not suggest measurement of "vibration" or ultrasonics that are not audible to man. The Examiner's reference to a conventional hearing aid, would not help one to hear the sound of a "Dog Whistle" (J. A. 80).

It is interesting to note after Appellant's hearing with the Examiner after receiving Paper No. 3 above that even the Coleman patent therein cited was dropped or abandoned as an anticipation against all 12 claims rejected on said Coleman Patent in the first action by the Patent Office.

Since the claims in the case are "combination claims," appellant believes a case following this Court's ruling in Marzall v. Switzer, above mentioned, appropriate. Thus, in Williams Iron Works Co. v. Hughes Tool Co., (C. A. 10, 1940), 109 F. 2d 500, 44 USPQ 322, two of the patents in issue were directed to rotary rock drills for oil well drilling and particularly to the heavy duty bearings of the rotary cutters to take care of vertical and lateral thrusts. In sustaining the validity of the patents over prior art which did not deal with this problem, the Court said:

"A prior patent to 'anticipate' a patent for a combination, must disclose all the elements of such combination or their mechanical equivalents, functioning in substantially the same way to produce substantially the same result."

The rest of this opinion should be controlling in instant case as expressed in the Joint Appendix (J. A. 28-29).

The Patent to Jearum does not show or suggest anything relative to determining the grain of a diamond. It is not concerned with determining the cutting grain of a work-piece. It merely passes over the grain periodically, in a manner Mr. Coleman teaches in his patent is "most expeditious for forming a small facet." Notwithstanding Coleman professed to determine grain on his machine, Jearum has no means for determining the grain of a diamond and has no means for positioning the machine with respect to the cutting grain of a diamond.

The "foreign" publication, "Diamond and Gem Stone Industrial Production," by Paul Grodzinski, N.A.G. Press, Ltd., London, 1942, Page 90. This publication teaches (1) "the direction of the grain is more difficult to ascertain"; (2) "it is difficult to find the grain"; (3) "in

one surface several grains may be present"; (4) "it is nearly impossible to find the grain by control and observation alone"; (5) "a trial method has to be applied"; (6) "idea of avoiding cutting according to the grain"; (7) "Automatic equipment to change the grain". (J. A. 86).

With respect to No. 7, automatic equipment to change the grain is the type exemplified by the Jearum patent, where one avoids cutting according to the grain but passes over it periodically. (J. A. 86).

Any reference to sound in this publication is of a very negative character, stating when a diamond is not running a cutter might know by the sound. Appellant is concerned with knowing when a diamond is cutting, and a scientific approach to determine which way it will cut and determine this quickly, not by "trial and error" as the book teaches.

It is strange if this author's book holds any suggestion of Appellant's invention, when he wrote a book about twelve years later called "Diamond Technology" (by the same author, Paul Grodzinski), N.A.G. Press, Ltd., London, 1953, which was submitted as Plaintiff's Exhibit No. 4 in the Court below, wherein he teaches

- (1) there is no scientific measure for the degree of 'running' in relation to the amount abraded off since great variations with different diamonds exist
- (2) in general, the diamond polisher can determine the orientation of a particular stone by trial and error
- (3) the direction in which the maximum material is removed in the shortest time has to be found by trial and error
- (4) the actual polishing direction must be determined by trial and error. (J. A. 89)

From the above, it would seem the Appellant proceeded counter to the teachings of the prior art, and certainly contrary to the teachings of "Diamond and Gem Stone Industrial Production" and "Diamond Technology."

Proceeding counter to the teachings of the prior art has always been indicative of invention. In instant case before this Court, the

weight of all exhibits before this Court, added to the apparatus and method claims held allowable, would indicate an invention of a pioneer nature has been made.

Moreover, it was held in the case of Lyon v. Bausch & Lomb Optical Co., Court of Appeals, 2nd Circ., Decided June 20, 1955, 106 USPQ 1, 224 F. 2d 530:

"In determining whether prior scientific article disclosed instant method, it is significant that the author thereof was still advocating use of inferior method at time patentee discovered instant method ten years after publication of article; also, if article disclosed instant method, it is strange that author did not use it."

In regard to anticipation by publication, it has been held in National Electric S. Co. v. United Wireless Tel. Co., 189 Fed. 727;

"A description which is insufficient to support a patent cannot be relied upon as an anticipation. Unless the prior publication describes the invention in such full, clear and intelligent terms as to enable persons skilled in the art to comprehend it, and reproduce the process or article claimed without assistance from the patent, such publication is insufficient as an anticipation."

It is well founded in patent law that a "foreign publication" can anticipate for only what it literally describes, therefore "Diamond and Gem Stone Industrial Production" is not a valid prior art in instant case, therefore does not anticipate claims in instant case.

C. EACH OF THE CLAIMS ON APPEAL DISTINGUISHES IN TERMS FROM THE DISCLOSURES OF THE COLEMAN, BAILEY, PLIMMER AND JEARUM PATENTS AS WELL AS FOREIGN PUBLICATION, "DIAMOND AND GEM STONE INDUSTRIAL PRODUCTION," BY PAUL GRODZINSKI. (Points 7-10,12, 13-14, 15, 16)

The uncontradicted and unqualified testimony offered at the trial establishes that the disclosure of each of the above patents and foreign publication lacks a number of the essential features of the Siegel invention, as defined by the claims on appeal. Thus, considering claim 21,

which the Board of Appeals considered typical, the following features are lacking from Bailey Patent 2,340,843 and Plimmer Patent 1,891,777, the numbering corresponding to that of the elements of claim 21 above (pp. 5-6) and in J. A. 81. (Note in J. A. 81 elements not numbered.)

- (1) Diamond cutting and polishing machine (J. A. 81)
- (2) Diamond cutting disc (J. A. 81)
- (3) Dop-holder (J. A. 81)
- (4) Dop (J. A. 81)

The following features are lacking from Jearum Patent 2,386,687:

- (6) Vibrations indicating means adapted to close an
- (7) electric circuit to an
- (8) electric motor which when energized rotates the
- (9) dop held in said
- (10) dop holder, to a position where cutting grain of diamond is presented to
- (11) cutting disc causing increased vibration of
- (12) dop-holder which actuates
- (13) vibration indicator which opens
- (14) electric circuit to
- (15) motor causing motor to stop rotation of
- (16) dop and leaving diamond on cutting grain position against
- (17) cutting disc.

The following features are lacking from Coleman patent 1,168,858:

- (6) vibration indicating means adapted to close an
- (7) electric circuit to an
- (8) electric motor which when energized rotates the
- (9) dop held in said
- (10) dop-holder, to a position where cutting grain of diamond is presented to
- (11) cutting disc causing increased vibration of
- (12) dop-holder which actuates
- (13) vibration indicator which opens
- (14) electric circuit to

- (15) motor causing motor to stop rotation of
- (16) dop and leaving diamond on cutting grain position against
- (17) cutting disc.

The following features are lacking from foreign publication, "Diamond and Gem Stone Industrial Production," by Paul Grodzinski, N.A.G. Press, Ltd., London, 1942:

All of the features of claim 21 as well as the following steps in claim to a method No. 59.

CLAIM 59:

- (1) Frictionally exciting diamond by placing a portion thereof in contact with a rotating surface,
- (2) measuring by instrumentation vibrations executed by said diamond on being thus excited,
- (3) rotating said diamond with respect to said surface, and
- (4) ascertaining the position of said diamond in which said vibrations are a maximum.

With respect to Bailey patent, Mr. Siegel established, when he testified at the trial, that Bailey device could not cut a diamond (J. A. 6).

With respect to the Plimmer patent, Mr. Siegel testified Plimmer's device could not cut a diamond (J. A. 11).

With respect to the C. J. Coleman patent cited by the Patent Office, Mr. Siegel testified the Coleman machine does not measure vibrations and teaches it is more expeditious to ignore the grain and just continuously rotate the diamond, so that the diamond might periodically be properly aligned with respect to its cutting grain against the diamond cutting disc (J. A. 11). Moreover, Mr. Siegel introduced new evidence disclosing there was no suggestion in Coleman's machine of Siegel's device because Exhibit 5, C. J. Coleman Patent 1,313,260, August 19, 1919, was a later attempt by the inventor Coleman to try to make a diamond cutting machine that would indicate the cutting grain, which was also a failure (J. A. 10), which, incidentally, was similar to the above mentioned patents to Leperre, Appellant's Exhibit 2 (J. A. 8) and

Schenkein & Lehmann, Appellant's Exhibit 3 (J. A. 9), which were dropped by the Patent Office as prior art.

Mr. Siegel produced at the trial a book by the same author, Grodzinski, above mentioned, who wrote a book 12 years later than the one cited by the Patent Office, entitled "Diamond Technology," advocating trial and error (J. A. 10) to prove there was nothing in the earlier book, "Diamond And Gem Stone Industrial Production," above mentioned, that could possibly suggest anything comparable to Siegel's invention. "Diamond Technology" was Appellant's Exhibit 4.

The Board of Appeals in its rejection of the claims in issue did not rely on what Coleman described as his invention but upon a vague prophecy, "differences in sound produced."

Mr. Siegel pointed out that this description of the prior art is much too vague and indefinite in terms to constitute a disclosure of his invention. Specifically, that general statement does not disclose the particular and critical measurement of vibration of a work-piece; it does not disclose the critical nature of these vibrations of the work-piece or suggest that it is important insofar as they vary, between different positions of the diamond; it does not suggest that there are vibrations which do not effect a sound audible to man; it does not suggest that there are sounds (ultrasonic) that are not audible to man. A Dog Whistle effects such a sound and, moreover, a conventional hearing aid would not make such a sound audible.

A good deal of the above applies to the very negative statement found in "Diamond and Gem Stone Industrial Production," referring to a specific sound when a diamond "does not cut".

There is nothing in the prior art teaching the scientific measurement of ultrasonic or merely vibration without sound was essential to solve a problem that has gone begging these many years and, though many attempts have been made, no one has realized the variations of the vibrations of the work-piece were both the problem and the solution

to taking advantage of these vibrations to automatically determine the cutting grain of a diamond.

With regard to these claims distinguishing over the prior art in terms, Appellant finds in Funk and Wagnalls "New 'Standard' Dictionary of The English Language," 1951, Dop. "Dop: 2 dop, N A copper cup with a wooden handle, in which a gem is soldered to be held while being cut or polished." The term "Dop" signifies so much structure and specific purpose for a specific type of material that a claim embodying the term "Dop" would necessarily distinguish and define over any device not concerned with cutting a gem.

Moreover, a Dop-holder is a tool for holding a dop, therefore this, too, would carry with it the limitations of the term "Dop", limited to receiving or holding said "Dop", otherwise known as a "Tong" or "Tang" in the diamond cutting art.

The Patent Office is in error and violates Section 112 of Title 35 above (pp. 10-11) when Mr. Miller demands for a "combination claim" that appellant put in positively the structure of the element relied on in the Court below (J. A. 7), and the Court below erred in construing Section 112, Title 35 in requiring in its Opinion appellant disclose "actual means" (J. A. 15), especially so where so many "means" type of claims have been allowed in instant case (J. A. 94-97).

Section 4888, R. S., requires that before any inventor or discoverer shall receive a patent for his invention he shall make application therefor, in writing to the Commissioner of Patents, and -

"he shall particularly point out and distinctly claim the . . . combination which he claims as his invention or discovery."

Do the class of claims now under consideration meet the requirements of the statute above mentioned, or are they vague and indefinite and fail to cover any definite construction, but seek to cover any and all means for effecting the stated result or function -- or do they merely cover a function?

It is thought that the decision of the United States Supreme Court in the case of Morley Sewing Machine Co., et al. v. Lancaster, (C. D., 1889, page 380), 129 U. S. 263, will throw considerable light on this subject. The first and thirteenth claims are the only ones that need be quoted since they are a fair type of the four claims relied upon by the plaintiffs:

"(1) The combination in a machine for sewing shank buttons to fabrics, of button-feeding mechanism, appliances for passing a thread through the eye of the buttons and locking the loop to the fabric, and feeding mechanism substantially as set forth.

"(13) The combination, with button sewing appliances, of a trough, appliances for carrying the buttons successively from the trough to the sewing devices, and mechanism for operating said appliances and sewing devices as set forth."

In each of the above-quoted claims, it will be found that not a single element, or group of elements, that enter into the combinations, has been structurally defined. On the contrary, each element, or group of elements, is qualified solely by the function performed.

The Court, in discussing this case, stated that:

"Morley, having been the first person who succeeded in producing an automatic machine for sewing buttons of the kind in question upon fabrics, is entitled to a liberal construction of the claims of his patent. He was not a mere improver upon a prior machine which was capable of accomplishing the same result; in which case, his claims would properly receive a narrower interpretation. This principle is well settled in the patent law, both in this country and in England. Where an invention is one of primary character, and the mechanical functions performed by the machine are, as a whole entirely new, all subsequent machines which employ substantially the same means to accomplish the same result are infringements, although the subsequent machine may contain improvements in the separate mechanisms which go to make up the machine."

It will be noted that in this decision there was not a dissenting opinion by any member of the Court. There was not the faintest hint by the Honorable Court that the claims sued on were not in proper form. Here was one of the clearest examples of combination claims, wherein the elements or groups of elements, entering into the combination, were each solely qualified by the function or result performed. Not a single structural limitation can be found in the above-quoted claims. If these claims were broader than the invention; vague, ambiguous or indefinite; for a function only; or for any and all means radically differing in structure and operation that in the future might be invented for effecting the stated results, will anyone seriously contend that the Supreme Court would, for a moment, hesitate to criticize and put their stamp of disapproval on such a type claim. The fact that these claims were approved, in their broadest aspect, consistent with the disclosure in the specification, goes to show that, in form, they respond to the requirements of the statute and met with the approval of the Court.

Commissioner Mitchell, shortly after the Morley decision, in ex parte Pacholder (C. D., 1890, p. 55), saw the importance and pertinency of the Morley decision to the question then under consideration and stated as follows:

'If the abundant use of the words 'means, mechanism, and appliances' (in Morley's claims) can invalidate them, in view of the statute which requires the applicant to particularly point out and distinctly claim the part, improvement or discovery it will be conceded that the claims of Morley were void for indefiniteness. But the court nowhere intimates that such is the case, and proceeds in a learned opinion to show that the Lancaster machine although differing essentially in matters of construction from the Morley machine, nevertheless employed equivalent mechanisms and appliances for accomplishing the same results, and therefore was an infringement. It is impossible to avoid the conclusion that if Morley had been held to the doctrine that the words 'means, mechanism, and appliances' may not be used in claims, when suitably qualified, he would have been unable to

hold as an infringer one who appropriated the principle of his invention disguised in an organization different from that which he showed in his patent in every other respect.

"No general rule can be laid down for governing the employment in the claims of patents of such words as those under consideration. It is the object of the law, as it is the solicitude of this Office, to protect inventors and guard their inventions.

". . . In the case, however, of patents which represent the infancy of an art or the stage of its earliest practical development, this Office is equally solicitous that the inventor should be accorded a breadth of claim which is commensurate with the extent and importance of the invention which he desires and is entitled to protect. . . . Of course, in all such cases while the Office will insist upon as much definiteness in the language of the claim as the statute calls for, it will also, if it properly discharge its function as the protector of the inventor leave something to the salutary and benignant agency of construction in the courts.

"As I have already indicated, the success of the inventor Morley in holding the Lancaster machine as an infringement was due to the fact that the Patent Office while respecting the statute, did not pervert it to the ignoble use of making it deprive the inventor of the very rights which it was designed to protect and foster."

It is now generally conceded that the courts, in construing a claim when an element of a combination is referred to by the term "means" or "mechanism," followed by a statement of function, treat it as though it were not the intention of the patentee to cover any and all means for attaining the stated function, but only the practical means described in the specification, or the fair equivalents of such means. In discussing the question in the case of Washer Co. v. Cramer (169 Fed. 629; 95 C.C.A., 157, 3rd Circuit), Judge Gray said that the language of the claim should not be considered dissociated from the specification, and that:

"no invention can be practically or fairly understood or explained if such dissociation is absolutely adhered to. As we have already shown

the element described in the first claim, as 'means for actuating said lever' must not be taken to be any means such as impracticable hand-power applied to the lever, but the efficient practical means described in the specification. Reading the claim and the specification together, the invention of the patentee was clearly such an application of mechanical power as would oscillate the tub with all the advantages afforded by the resiliency and retardation of the springs of the standard washer preserved."

It is well established and settled practice of the courts that claims for a "primary" or "pioneer" invention should be given considerable liberality of construction. It is not always a very easy matter, however, to determine what are pioneer inventions, in cases of patents such as the Morse electrical telegraph, the Howe sewing machine or the Bell telephone, no trouble would be experienced in determining their character. Many instances frequently arise, however, which require considerable thought and consideration in order to determine whether or not they should properly be classed as pioneer inventions. Take, for instance, the definition of a "pioneer" invention, as given by Mr. Justice Brown in U. S. Supreme Court decision in case of Boyden, et al. v. Westinghouse, et al., (C. D., 1898, page 443). In speaking of the word "pioneer" as applied to inventions, the Court said:

"This word, although used somewhat loosely, is commonly understood to denote a patent covering a function never before performed, a wholly novel device, or one of such novelty and importance as to mark a distinct step in the progress of the art, as distinguished from a mere improvement or perfection of what had gone before."

Under the above definition, any new combination of elements, or groups of elements (whether such elements are old or new) which effect a new and useful result or function, never before performed, constitutes an invention properly coming within the range of pioneer inventions. An invention, in order to come within the class of "pioneer" inventions, certainly under the Supreme Court definition of the term above given,

does not have to be extremely radical or revolutionary in its character, but if it produces a novel and desirable result or function it falls within this class of inventions.

The following cases seem to support plaintiff's right to "means" qualified by functional limitations in combination claims under old statute 4888, R. S.:

In Monash Younker Co. v. National Steam Specialty Co., 208 Fed. 559, C. C. A., 7th Circuit, it was held that "means" qualified by the function performed did not preempt the entire field of invention but that the patentee was entitled only to the means disclosed, or their fair equivalents.

In Arnold v. Tyden, 193 F. 410, the same Circuit Court of Appeals held that: "In the Paper Bag Patent Case, 210 U. S. 405, Supreme Court 748, the Supreme Court held 'that claims for means are valid when the specification clearly discloses the particular means or mechanism having the function indicated in the claims.' Under this rule held that the claims of the Tyden patent, No. 675,577, should be sustained."

Plaintiff having viewed Section 4888, R. S., in the light of above prior decisions, would like to view it as it is now, 35 U.S.C. 112 in the light of recent decisions.

Regarding combination claim where Structure, Material, and Acts clearly recited in specification, the Patent Office Board of Appeals held in Ex parte Mayer, 111 U.S.P.Q. 109, in opinion of May 21, 1956, where patent issued September 25, 1956:

"(1) The last named means in each of the appealed claims is couched in the form of a means for performing a specified function clause.

"We are unable to find anything functional or indefinite in the use of that language in a combination claim. The third paragraph of 35 U.S.C. 112 specifically states that:

"An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts

in support thereof, and such a claim shall be construed to cover the corresponding structure, material or acts described in the specification and equivalents thereof.'

"And we find no valid reason for objecting to the use of such a clause merely because it is at the exact point of novelty in a combination claim if the claim in fact satisfies the second paragraph of 35 U.S.C. 112 that is, that the various elements in the claim, whether recited by specific structure or by a means clause, are properly correlated with each other. Ex parte Ball and Hair, 1953, C. D. 4, 675 O. G. 5, 99 USPQ 146.

"(2) In the instant case, all of the elements called for in the claims, including the structure comprehended by the means clause are properly correlated with each other.

"The Examiner's rejection of the claims as being functional and indefinite is not sustained."

Plaintiff finds in TRAINING MANUAL FOR PATENT EXAMINERS, part 1, Introduction to Patent Law and Examining Practice, by U. S. Department of Commerce Patent Office, Edition of June, 1955, on page 5:

"FAILURE TO POINT OUT INVENTION

"35 U.S.C. 112 (2nd paragraph) requires that there be 'one or more claims pointing out and distinctly claiming' the subject matter of the invention. There are various respects in which a claim presented in an application may fail to meet this requirement.

"1. It may be vague, confused or ambiguous in language.

"2. It may recite elements or features of the device which are not disclosed in the specification or drawing.

"3. It may be in conflict with the disclosure.

"4. It may be in alternative form, e.g., it may recite 'a brake or locking device.'

"5. The claims may be so numerous that the public would be confused as to just what scope of protection the inventor is seeking."

D. THE TRIAL COURT FAILED TO GIVE PROPER WEIGHT TO THE EVIDENCE BEFORE IT IN ADDITION TO THAT BEFORE THE PATENT OFFICE. (Points 1-5, 15, 16)

At the trial in the Court below, Appellant introduced extensive evidence in addition to that before the Patent Office. Siegel, the inventor, a skilled machinist of some twenty-seven years experience testified as to the state of the art before his invention and the problem presented by that art; namely, the provision of a diamond cutting machine which would indicate the direction of the cutting grain of a diamond subject to machining operation by said diamond cutting machine and provide electro-mechanical controls for said operation in preference to tactile, auditory, and visual handling by skilled worker in the diamond cutting art; his efforts in solving that problem; the fundamental characteristics and essential features of his invention; and the nature of the disclosures of the Bailey patent (J. A. 6-7) and the Coleman patent No. 1, 168, 858 (J. A. 10-11) and the Plimmer patent (J. A. 11-12) and the foreign publication, "Diamond and Gem Stone Industrial Production," as well as new evidence submitted and explained to the Court, in addition to which Appellant gave argument and testimony without cross examination by Mr. Miller with respect to the merit of Appellant's holdings; Plaintiff's Exhibit No. 2 (Patent No. 1, 458, 768, June 12, 1923, E. F. A. C. Leperre; J. A. 8); Exhibit No. 3 (Patent No. 1, 166, 006, December 28, 1915, S. W. Schenkein and O. P. R. Lehmann; J. A. 9); Exhibit No. 4 "Diamond Technology," by Paul Grodzinski (J. A. 9-10); Exhibit No. 5 (Patent No. 1, 313, 260, August 19, 1919, C. J. Coleman; J. A. 10); Exhibits 2, 3, 4, and 5 introduced by Appellant to show practical state of the art, efforts to improve the art and their failure to suggest Appellant's invention or reach solution represented by Vibration Variation Control. Exhibit No. 2, Patent to E. F. A. C. Leperre, and Exhibit No. 3, Patent to Schenkein and Lehmann, were erroneously cited as anticipating, were abandoned by the Patent Office as prior art, in spite of being in the diamond cutting art directly and for the purpose of determining the grain of a diamond and removing diamond when it was supposed to be finished. Exhibit No. 4, "Diamond Technology," by

Paul Grodzinski, confirms the author's statement in a book, "Diamond and Gem Stone Industrial Production," by the same author twelve years prior to "Diamond Technology." The earlier book was cited by the Patent Office and disclosed that the grain of a diamond could only be determined by trial and error. Appellant's Exhibit No. 4, "Diamond Technology," states on page 177, lines 29-31:

"Moreover, there is no scientific measure for the degree of 'running' in relation to the amount abraded off since great variations with different diamonds exist." (J. A. 89).

Page 599, lines 20-21:

"In general the diamond polisher can determine the orientation of a particular stone by trial and error." (J. A. 89).

Page 195, lines 20-21:

"The actual polishing direction must be determined by trial and error." (J. A. 89).

At the trial in the Court below, Mr. Miller conceded for the Patent Office that the Plaintiff has invention (J. A. 27).

In the Brief for the Defendant in the Court below, Mr. Arthur H. Behrens, after a thorough analysis of the prior art separately and viewing one through the other and specifically explaining Plaintiff's Exhibit No. 4, "Diamond Technology," conceded the prior art to be one of trial and error (J. A. 67-68).

Plaintiff's Exhibit No. 5 (Patent No. 1,313,260 to C. J. Coleman, the same inventor of the earlier Patent No. 1,168,858), which was cited against instant invention, discloses his "prophetic reference to sound" held no suggestion to the very inventor who tried to make a diamond grain indicator later in Exhibit 5 and again failed, notwithstanding alleged "obviousness" of instant invention from Coleman's vague prophecy in earlier patent.

The Trial Court quite apparently gave little weight to all of the foregoing evidence not before the Patent Office, stating:

"This is a most difficult case which involves intricate and technical questions. The Patent Office has the equipment for deciding intricate and technical questions * * * There is a presumption that the Patent Office is right * * * I find in this case that the evidence submitted by the plaintiff has not overcome the presumption 'by clear proof of mistake.' I therefore find for the defendant."
(J. A. 20)

even though such determination was made by the Patent Office without the benefit of the extensive additional evidence referred to above. This was an error of law. Clearly there is no presumption in favor of the correctness of an administrative determination made on the basis of only partial facts. The procedure before the Patent Office does not afford an opportunity to present evidence fully and completely, as was done in the Court below. This is undoubtedly the primary reason Congress gave an applicant his "day in court," as provided by Section 145 of the Patent Act (supra, p. 11). If the Court fails to accord proper weight to such additional evidence, the remedies provided by Section 145 are nullified.

Further, the technology of the Siegel invention as described in the specification (J. A. 32-37) and defined in the claims on appeal (J. A. 40-42) and defined in the claims allowed (J. A. 94-97) as explained by Siegel at the trial (J. A. 12-13), is so simple that it is submitted that the Trial Court erred in holding that "This is a most difficult case which involves intricate and technical questions. The Patent Office has the equipment for deciding intricate and technical questions * * *."
(J. A. 20). This Court has repeatedly reversed judgments of the Trial Court and the Patent Office in proceedings of this nature where such judgments, as here, have involved the misapplication of accepted legal principles to essentially undisputed facts. Thus, in the recent case of George F. Strader, et al. v. Robert C. Watson, Commissioner of Patents, (No. 13,517, decided May 13, 1957, 100 U. S. App. D. C. 289; 719 O. G. 422; 244 F. 2d 737; 113 USPQ 365), in reversing the District Court and authorizing the Commissioner of Patents to issue a patent embodying

the 14 claims which were formerly rejected for "Image-Engraving Plate and Process of Producing the Same" over prior art on which the Patent Office and the District Court found the claims to be unpatentable, this Court said:

"The memorandum opinion of the trial judge shows his ruling was based largely on the presumption that the decision of the expert Patent Office is correct. We quote from his opinion:

" 'The issues raised in this case are within the special competence of the officers of the Patent Office, and the case is therefore controlled by the presumption in favor of the determination by the Patent Office.

* * * *

" ' . . . Since the evidence reveals a reasonable basis for the determination of the Patent Office, judgment must be awarded for defendant.'

'It should be noted, however, that at the hearing in the District Court the appellants introduced material evidence tending to show patentability over the Hickman references. This proof, which will be noticed later in this opinion, was not contradicted and contained information which was not presented to the Patent Office. That being true, the District Court was not controlled by the presumption of correctness which attaches to Patent Office action, but was free to reach its own conclusion on the basis of the fuller information which was before it.

* * * *

"* * * We think the record shows that Hickman and Strader, working in different fields, solved different problems by developing different processes which produced products of different structure designed for different uses. It follows that Hickman's processes and products, though earlier, did not anticipate Strader's."

Also, in the recent case of L-O-F Glass Fibers v. Watson (1955, ___ App. D. C. ___, 228 F. 2d 40, 107 USPQ 197), in reversing the District Court and authorizing the Commissioner of Patents to issue a

patent on a claim for a glass heating apparatus over prior art on which the Patent Office and the District Court found the claim to be unpatentable, this Court said:

"* * * The finding that the Cook's claim 1 is unpatentable over the prior art of Barnard and Staelin stems from the application by the trial Judge of a higher standard than the law demands with the result that his conclusion lacks substantial support in the evidence. It was not a case of what should have been -- but was not -- obvious to Dr. Plummer, and enough has been said to demonstrate that there was no 'obviousness' to the other experts. * * * On the record made and with the Exhibits before us, we are permitted a 'subjective opinion or formulation of a judgment,' which when so predicated, makes clear that the 'combination and improvement admittedly brought about are the product of creative talent' which lifts the Cook's claim 1 to the level of patentability over and above the prior art cited. * * *"

In considering itself effectively bound by the decision of the Patent Office, the Trial Court referred to the decision of this Court in Esso Standard Oil Company v. Sun Oil Company, 97 U. S. App. D. C. 154, 157.

That case involved a proceeding for a determination of the right to registration of the mark "Sunvis" as opposed to the mark "Univis."

It is true the opinion of this Court did contain the general statement:

"* * * In patent * * * cases * * * a finding of fact by the Patent Office as to priority of invention * * * must be accepted as controlling, unless the contrary is established by evidence which, in character and amount, carries thorough conviction. * * *"

This same opinion also brings out,

"* * * The evidence before the District Court was the same as that before the Patent Office * * *

* * * *

"* * * There was thus no new evidence
before the District Court * * *"

Appellant in instant case before this Court provided a great deal of pertinent evidence and testimony for the Court below, therefore Esso v. Sun, supra, not deemed to be controlling in instant case.

In considering itself effectively bound by the decision of the Patent Office, the trial Court referred to the decision of the Supreme Court in Morgan v. Daniels, 1894, 153 U. S. 120, 125, 14 S. Ct. 772, 38 L. Ed. 657. This case was an interference involving priority of invention. The Supreme Court reversed the judgment of the Circuit Court. It is true the opinion of the Supreme Court does contain the general statement:

"* * * a mere preponderance of the
evidence is not enough to justify reversing
the Patent Office and deciding that an appli-
cant is entitled to a patent * * *."

The same opinion contains the following:

"* * * The case was submitted to the
Circuit Court upon the testimony used in the
interference proceeding * * *."

* * * *

"* * * this case was submitted, without
any additional testimony, to the Circuit Court
* * *."

Appellant before this Court provided additional testimony as well as new evidence. There was no new evidence or testimony in the above case. It would appear the lower Court erred in relying on it.

The above two cases were considered only on the record before the Patent Office, so the proceeding was more truly in the nature of an appeal from the Patent Office decision than a trial de novo. This factor undoubtedly influenced this Court's statement quoted by the lower Court, as well as the statement made by the Supreme Court upon which the lower Court relied.

In considering itself effectively bound by the decision of the Patent Office, the Trial Court referred to the decision of Robertson v. Cooper, 4 Cir., 46 F. 2d 766, 768. This case involved a design patent. It is true the opinion of the Court does contain the general statement:

"* * * The Patent Office has the equipment for deciding intricate and technical questions * * *. While the judgment of the Patent Office is not absolutely binding on the courts, it is entitled to great weight, and is to be overcome by clear proof of mistake. * * *"

The same opinion further states:

"* * * The judge below * * * apparently based his opinion on the fact that there were comparatively a few letters in the word 'Asbestos', whereas the application was for an entire font of type, and, therefore, could not be anticipated by the use of a few letters only.

"We cannot agree with this conclusion * * *."

There is nothing in this decision relied upon by the District Court that is repugnant to or in any way overruling the law with respect to new evidence expressed by the Court below in re Cooper v. Robertson, Commissioner of Patents, 38 F. 2d 852, No. 1,362, District Court D. Maryland, Jan. 31, 1930:

"* * * (2) At the outset it is proper to point out that the present proceeding is not in the nature of an appeal, but rather a trial de novo, with all the customary power of an equity court to hear the evidence fully and to make its own findings * * *."

This concept is still followed by this Court as expressed in Strader, et al. v. Watson, supra.

Hence, the decision in the Esso Standard Oil Company v. Sun Oil Company and Morgan v. Daniels or Robertson v. Cooper, supra, is not controlling here. The decisions in Strader, et al. v. Watson and L-O-F Glass Fibers are more apposite to the facts of the instant case.

CONCLUSION

In brief, the decision and the judgment of the Trial Court represent misapplication of accepted legal principles to the facts of this case in that they disregard the extensive evidence in the case that the Siegel invention represents a substantial advance in the useful arts; they disregard the fact shown by the record that the prior art represented by Coleman, Bailey, Plimmer, Jearum and foreign publication, "Diamond and Gem Stone Industrial Production," failed to disclose the problem solved by the Siegel invention and failed to suggest its solution; they disregard the fact that the case below was a trial de novo so that the Trial Court was bound to give appropriate weight to additional evidence not before the Patent Office. On the whole record, the Trial Court should have authorized the Patent Office to issue a patent to Siegel including claims 1, 7, 21, 43, 44, 45, 49, 50, 51, 53, 55, 56, 59 and 67, inclusive, on appeal.

It is submitted that the judgment of the Trial Court should be reversed.

Respectfully,

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Dated: August 15, 1958

BRIEF FOR APPELLEE

**United States Court of Appeals
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

APPEAL NO. 14,417

LEWIS A. SIEGEL, APPELLANT

v.

**ROBERT C. WATSON, COMMISSIONER OF PATENTS,
APPELLEE**

**Appeal from the Judgment of the United States
District Court for the District of Columbia**

**CLARENCE W. MOORE,
*Solicitor, United States Patent Office,
Attorney for Appellee.***

**ARTHUR H. BEHRENS
*Of Counsel***

*United States Court of Appeals
For the
District of Columbia Circuit*

FILED OCT - 9 1958

Joseph W. Stewart

CLERK

STATEMENT OF THE QUESTION PRESENTED

In the opinion of the appellee the question presented by this appeal is:

Whether the patentability of an application claim, when challenged by a rejection on the prior art or for indefiniteness, should be measured by the claim itself or by reference to the structure actually described in the specification?

III

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United States Court of Appeals
FOR THE DISTRICT OF COLUMBIA CIRCUIT

APPEAL No. 14,417

LEWIS A. SIEGEL, APPELLANT

v.

**ROBERT C. WATSON, COMMISSIONER OF PATENTS,
APPELLEE**

**Appeal from the Judgment of the United States
District Court for the District of Columbia**

BRIEF FOR THE COMMISSIONER OF PATENTS

INTRODUCTION

This is an appeal by Lewis Siegel from the judgment (J.A. 21) of the United States District Court for the District of Columbia dismissing his complaint in an action under Section 145, Title 35, of the United States Code. In this action appellant sought to have the District Court authorize the issuance to him of a patent containing claims 1, 7, 21, 43, 44, 45, 46, 49, 50, 51, 53, 55, 56, 58, 59, 67 and 68 of appellant's application for patent, entitled "Vibration

Variation Control," Serial No. 153,430, filed April 1, 1950. Appellant's brief, page 5, expressly "drops" claims 46, 58, and 68 from the case so that the claims before the Court consist of claims 1, 7, 21, 43, 44, 45, 49, 50, 51, 53, 55, 56, 58, 59, and 67.

The examiner (J.A. 46) indicated as allowable claims 15, 42, 47, 48, 52, 54, 57, 60, 61, 62, 63, 64, 65, and 66—fourteen claims in all.

The claims in suit were each rejected on one or both of two general grounds of rejection, (1) as being unpatentable over various prior art references and (2) as being indefinite, i.e., as failing to point out the appellant's invention with the particularity required by 35 U.S.C. 112 (and by its predecessor, Revised Statutes, Section 4888). These rejections affirmed by the Board of Appeals are listed below in the order they were considered in the Board's decision (J.A. 55):

- (a) claim 1, as being unpatentable over the patent to Bailey, No. 2,340,843, granted February 1, 1944 (Defendant's Exhibit 1-A), or the patent to Plimmer No. 1,891,777, granted December 20, 1932 (Defendant's Exhibit 1-D);
- (b) claim 7, as being unpatentable over the patent to Coleman, No. 1,168,858, granted January 8, 1916 (Defendant's Exhibit 1-B);
- (c) claims 21, 43, 49, and 50, as being unpatentable over the patent to Coleman (Defendant's Exhibit 1-B) taken in view of the patent to Plimmer (Defendant's Exhibit 1-D);
- (d) claim 51, as being indefinite;

(e) claim 51, as being unpatentable over the patent to Jearum, No. 2,386,687, granted October 9, 1945 (Defendant's Exhibit 1-C), taken in view of the patent to Plimmer (Defendant's Exhibit 1-D);

(f) claim 53, as not distinguishing patentably from either the patent to Bailey (Defendant's Exhibit 1-A) or the patent to Plimmer (Defendant's Exhibit 1-D);

(g) claims 44, 45, 55, 59, and 67, as being unpatentable over the publication "Diamond and Gem Stone Industrial Production" (1942) by Paul Grodzinski, page 90 (Defendant's Exhibit 1-E);

(h) claim 56, as being unpatentable over the patent to Bailey (Defendant's Exhibit 1-A).

On reconsideration (J.A. 65) the Board adhered to its original decision.

COUNTER STATEMENT OF CASE

The application in suit relates to a method and apparatus for cutting diamonds or other substances having a grain structure. [The application utilizes the term "cutting" in the generic sense, including "cutting, grinding, lapping or polishing" (J.A. 32)]. In this method and cutting apparatus the diamond to be cut is presented to a rotating cutting disc in a certain direction relative to the "polishing grain" or "cutting grain" of the diamond so that the diamond may be cut. It is known that when the diamond is being ground in this direction relative to the grain a different character of vibration is pro-

duced than when the diamond is being presented to the grinding means at some other angle. Appellant utilizes this difference in the vibration characteristics to align the diamond in a cutting direction relative to the cutting disc and to maintain the diamond and the cutting disc in this relationship.

In appellant's apparatus this is accomplished by connecting a microphone to the diamond holding means and causing a current to flow through this microphone. This current will vary in amount with the degree of vibration of the diamond, increasing when the diamond is being cut on the grain and decreasing when the diamond is being ground at an angle to the grain. The current through the microphone is passed through an ammeter which indicates the amount of current flowing. The needle of this ammeter is the means for opening or closing an electric power circuit which may, in the principal embodiments of the application, (1) energize an electric motor which rotates the diamond holder, (2) actuate a solenoid catch to cause the diamond to be lifted out of engagement with a cutting disc, or (3) energize an electric motor which causes the rotating cutting disc to move in a planetary path around the diamond being cut while maintaining cutting contact with it.

The pertinent disclosures of the patents and the publication over which the Patent Office examiner, the Patent Office Board of Appeals, and the District Court held the claims in suit to be unpatentable are discussed in the following argument in connection with the separately considered specific rejections, no one of which is applicable to all the claims.

SUMMARY OF ARGUMENT

The claims in an application, in contrast to those of a granted patent, are read as broadly as their terms will permit. Limitations not appearing in the claims, although adequately stated in the specification, will not be read into the claim in order to avoid anticipation. The third paragraph of 35 U.S.C. 112 does not make it unnecessary for "means" claims to particularly point out and distinctly claim the invention. The appellant's claims in suit, for reasons particularly pointed out, fail to distinguish from the prior art patents and publication cited. Appellant's claim 51 fails to definitely define the proper function of appellant's apparatus. The new evidence introduced by appellant at the trial was not of a character to demonstrate that the decisions of the examiner and the Board of Appeals rejecting the claims in suit were incorrect or unreasonable.

ARGUMENT

The basic difference of opinion in this appeal between the Patent Office examiner, the Board of Appeals, and the District Court, on one hand, and the appellant, on the other, arises from the circumstance that the examiner (see Examiner's Statement, J.A. 46), the Board of Appeals (original decision, J.A. 55; reconsideration, J.A. 65), and the District Court (Opinion, J.A. 13) consider the claims of appellant's application to be the measure of his invention while appellant emphasizes the inventive features of the specific invention which he disclosed in his specification (see appellant's brief, page i, "Statement of

Questions Presented," paragraphs 1, 2, and 4, and Summary of Argument," page 13). Since the Patent Office examiner allowed (J.A. 46, 47) numerous claims which he believed reasonably define appellant's invention, the Patent Office makes no contention that appellant's invention *as so defined* is not entitled to patent protection. The claims of an application, however, are the measure of invention. *In re Lundberg et al.*, 44 C.C.P.A. 909, 915, 244 F. 2d 543, 548; *Montgomery Ward & Co., Inc. v. Coe*, 78 U.S. App. D. C. 224, 139 F. 2d 17; *In re Lambert et al.*, 41 C.C.P.A. 875, 880, 212 F.2d 594, 598. The claims in suit are those of an application and they must be read as broadly as their terms will permit; limitations not expressed in the claims, though adequately stated in the specification, will not be read into the claims in order to avoid anticipation in the prior art. *In re Hooker*, 36 C.C.P.A. 1164, 1168; 175 F.2d 558, 560, and the decisions cited therein. The fact that an application, rather than a granted patent, is involved makes inapplicable such decisions as *Monash YOUNKER Co. v. National Steam Specialty Co.* (CCA 7, 1913) 208 Fed. 559, (appellant's brief, page 31) which limit the scope of patent claims in view of the prior art. The Court of Appeals of the District of Columbia made this clear in *In re Carr*, 54 App. D. C. 283, 297 Fed. 542, quoted as follows:

"After a patent has issued, and it no longer is possible for the patentee to control the phraseology of his claims, the court will so interpret them, if possible, as to protect him; but there is no reason, as we have many times observed, why

an applicant in the Patent Office should not draw his claims to cover his actual invention only. For this reason, we have uniformly ruled that claims will be given the broadest interpretation of which they reasonably are susceptible. This rule is a reasonable one and tends not only to protect the real invention but to prevent needless litigation after the patent is issued."

Apparently appellant predicates the patentability of the claims in suit on the theory (appellant's brief, page 29) that a patent claim which defines an element of a combination by the term "means" or "mechanism" followed by a statement of function will be construed by the courts "as though it were not the intention of the patentee to cover any and all means for attaining the stated function, but only the practical means described in the specification, or the fair equivalent of such means." Appellant believes, apparently, that no matter how broad or indefinite the statement of the function of a particular means in a claims, and no matter how lacking the distinction between the structure *defined in the claim* and the prior art, an applicant may dispose of a rejection on either the prior art or for indefiniteness of the claim by pointing to the structure actually described *in his specification*. It is believed evident that appellant's theory of construction, if accepted, would eliminate the distinction between application claims of varying breadth, and therefore, make unnecessary multiple claims in appellant's application. Appellant's theory, for which he apparently invokes (appellant's brief, pages 31 and 32) the sanction of the third paragraph of 35 U.S.C. 112 (quoted in

appellant's brief, pages 10 and 11), was rejected in *In re Lundberg et al.*, 44 C.C.P.A. 909, 244 F. 2d 543, where the court, speaking through Chief Judge Johnson, made the following ruling:

We are of the opinion, therefore, that, notwithstanding the third paragraph of section 112, it is the language itself of the claims which must particularly point out and distinctly claim the subject matter which the applicant regards as his invention, without limitations imported from the specification, whether such language is couched in terms of means plus function or consists of a detailed recitation of the inventive matter. Limitations in the specification not included in the claim may not be relied upon to impart patentability to an otherwise unpatentable claim.

In re Lundberg follows, and is consistent with, *In re Arbeit et al.*, 41 C.C.P.A. 719, 206 F. 2d 947, which first considered the effect of 35 U.S.C. 112 on the construction of application claims containing "means" type of terminology.

Since the issue presented by this appeal is the propriety of the rejections of certain claims, these rejections are discussed below in the order that they appear in the Board's original decision (J.A. 55).

a. REJECTION OF CLAIM 1 ON BAILEY OR PLIMMER

Claim 1, directed to the bald combination of a "vibration indicator connected to a diamond holding means," identifies two elements of the plaintiff's device. This claim was rejected as unpatentable over the patents to Bailey, No. 2,340,843 (Defendant's

Exhibit 1-A) or Plimmer, No. 1,891,777 (Defendant's Exhibit 1-D). The combination of the two elements as claimed is not restricted to any particular utility and is not required to function in any particular relationship with other elements.

The Plimmer patent (Defendant's Exhibit 1-D) shows a grinding machine provided with means for stopping the travel, or feed, of a grinding wheel toward a work piece when this work piece has been reduced to a predetermined size. The device for stopping the feed comprises a diamond 102 mounted (see Figure 6 of the patent) on the armature 101 which moves in a generator 67, which, as disclosed on page 4, lines 3-20, generates a current flowing through a current flow meter. As stated at page 3, lines 68-82, the contact of the diamond with the grinding wheel causes oscillatory vibration, which in turn causes the generation of a current measured by the current flow meter. Claim 1, therefore, reads directly on the Plimmer generator armature (which holds a diamond) connected with a current flow meter (which indicates oscillatory vibration).

The Bailey patent (Defendant's Exhibit 1-A) shows in Figure 1 a grinding machine for grinding piezo-electric crystals to a thickness corresponding to a desired natural resonance in the crystals. The crystals 5 are supported on a work-table, or holder 1, which is electrically connected to an amplifier 10 and frequency meter 14. As the patent states on page 1, column 1, lines 10-24, the vibrations in the piezo-electric crystals result in an alternating potential across their faces and the frequency of this potential

(which is measured by the frequency meter) is equal to the frequency of the mechanical vibration and hence is directly indicative of the natural resonance frequency of the crystal.

The Bailey patent relates to piezo-electric crystals and does not describe the work-table as a holder for a diamond, but the patented device includes the actual structural combination of appellant's claim 1, to wit; a crystal holder (work table) 1 connected with a vibration indicator (frequency meter 14). The claim does not distinguish by merely terming the holder a "diamond holder." The reference to the function of the element without a recitation of a distinguishing structure is not sufficient to support the allowance of the claim. *In re Gregg*, 44 C.C.P.A. 904, 908; 244 F. 2d 316, 319; *In re Carr*, 28 C.C.P.A. 1240, 1244; 120 F.2d 386, 388; *In re Stattmen*, 32 C.C. P.A. 813, 816; 146 F.2d 290, 292. It would seem immaterial in considering the invention as claimed in appellant's claim 1 whether or not the Bailey and Plimmer patents "are directed to a problem totally different from that of Appellant Siegel," as appellant's brief alleges (page 17), since appellant chooses to assert a monopoly in the inclusive language of claim 1.

B. REJECTION OF CLAIM 7 ON COLEMAN

Claim 7, which was rejected as being unpatentable over the patent to Coleman No. 1,168,858 (Defendant's Exhibit 1-B), reads as follows:

"A vibration controlled dop holder having automatically acting dop rotating means adapted to

rotate the dop to the cutting grain position of the diamond in said dop relative to said cutting disc."

This claim calls for two elements, a dop holder and an "automatically acting" means for rotating this dop holder, and specifies that the dop holder be "vibration controlled".

The patent to Coleman (Defendant's Exhibit 1-B), as the Board found (J.A. 60), discloses all the structure positively recited in claim 7, the distinctions over the reference in the claim, if any, being purely functional. The Coleman patent shows in Figure 1 a diamond 16 set in a dop head, a diamond holding head 14, which has a vertical main shaft 7 which is driven through worm gearing by an electric motor 22. Since the rotation of the dop is by an electric motor the dop rotating means is "automatically acting" as called for by claim 7.

The device illustrated in Coleman's Figure 1 determines the cutting grain of the diamond by measuring the differences in frictional resistance to the rotating abrasion member 4, as the diamond is presented in different rotative positions. Coleman's device of Figure 1, therefore, does not meet the functional requirement of claim 7. Since that claim, however, does not positively recite, or point to, any structure which would give any vibration control, "vibration controlled", an indication merely of general result, imports no patentable distinction over the Coleman device of Figure 1. *In re Schmidt et al.*, 30 C.C.P.A. 785, 790, 132 F.2d 869, 872; *In re Drissner et al.*, 33 C.C.P.A. 1162, 1165, 156 F.2d 164, 168.

Moreover as the Board's decision notes (J.A. 59-60), the Coleman patent contains an additional disclosure which meets *even the functional requirement of claim 7*. Coleman discloses (Defendant's Exhibit 1-B, page 1, lines 33-55) that the cutting grain of the diamond being rotated may be determined by the differences in sound produced. Appellant's brief (page 19) argues that this reference in Coleman's patent to the determination of the grain of the diamond by differences in the sound produced "does not suggest measurement of 'vibration' or ultrasonics that are not audible to man." Appellant's claim 7, however, does not require measurement of "ultrasonic" vibrations and such a requirement would not be apparent from appellant's specification. Appellant's specification (J.A. 35, line 10) describes the use of a "microphone" as part of the "vibration indicator" and a microphone, as a dictionary will confirm, is a device for intensifying feeble *sound*, or for transmitting *sounds*.

As the Board in its decision on reconsideration pointed out (J.A. 65, 66), it is common knowledge, as disclosed by any textbook on physics, that sound and vibration are correlated. [The Board gave as an example the statement on page 188 of "College Physics" by Kimball, copyrighted November, 1923, "All sources of sound are vibrating bodies capable of setting up air vibrations."]

Appellant's brief suggests (page 18) that "it appears" the Coleman patent (Defendant's Exhibit 1-B) is a "paper patent" which has made no imprint on the diamond cutting art, and refers to its "vague prophe-

cies". The record does not establish that the Coleman patent, granted to Stern-Coleman Diamond Machine Company, Inc., is a "paper patent" or "vaguely prophetic," but a patent would not be ineffective even if it were a "paper patent" which "may have lain for years unheeded." *Western States Machine Co. v. S. S. Hepworth Co.* (CCA 2, 1945) 147 F.2d 345, 350. Even if the patent's disclosure were *inoperative*, claims not distinguishing from that disclosure would not be allowable. *In re Hollingsworth*, 41 C.C.P.A. 795, 798; 210 F.2d 290, 293.

**c. REJECTION OF CLAIMS 21, 43, 46, 49, AND 50 ON
COLEMAN IN VIEW OF PLIMMER**

The Board (J.A. 54-64, pertinent discussion 60-61) affirmed the rejection of claims 21, 43, 46, 49, and 50 as being unpatentable over the patent to Coleman [Defendant's Exhibit 1-B, discussed under (b) above] taken in view of Plimmer [Defendant's Exhibit 1-D, discussed under (a) above]. As the Board pointed out (J.A. 60)

"The statement in Coleman that the grain of a diamond may be determined by 'differences in sound produced' (page 1, column 1, lines 53 and 54 of patent) would suggest to one skilled in the art that a vibration responsive means such as disclosed by Plimmer at 68, etc., in Fig. 11 could be substituted for the friction responsive means disclosed in Fig. 1 of Coleman without invention. As we have already stated, the Examiner has discussed the individual claims in this group pointing out why they are not patentable over the references. We find no error in the Ex-

aminer's position with respect to claims 21, 43, 46, 49 and 50 as stated on pages 10 to 12 of his Statement, to which reference is made, and the rejection of these claims will be sustained."

Appellant's brief (page 19, first complete paragraph) asserts that "Coleman in view of Plimmer does not suggest Appellant's invention because the transfer of any sizing mechanism from Plimmer would render Coleman as ineffective as those patents abandoned by the Patent Office." As far as this assertion suggests that the disclosure of Plimmer could not be *bodily incorporated* into the disclosure of Coleman to produce appellant's apparatus, appellant is relying on an argument against a combination of references which has been expressly rejected in *In re Henley*, 44 C.C.P.A. 701, 704; 239 F.2d 399, 401; and *In re Mason*, 44 C.C.P.A. 727, 730; 240 F.2d 362, 364, as being contrary to reason and precedent. As stated in *In re Henley*, "it is adequate to negative patentability if one skilled in the art, having the teachings of the references before him, is able, without the inventive faculty, to produce the subject matter recited in the claim."

By appellant's above quoted reference (brief page 19) to "patents abandoned by the Patent Office" appellant attempts to make these "abandoned" patents the basis for comparison with the reference patents instead of the appellant's *claimed* device. It is not apparent, however, that it would aid appellant's cause to establish that certain patents cited by the examiner and then dropped are better suggestive of appellant's claimed apparatus than those finally relied on. The

"abandoned" patents to which appellant's brief refers (pages 19 and 20) were cited by the examiner in his first letter to the appellant (J.A. 68, paper No. 3) and not relied upon after appellant had modified his original claims 8 and 16 (J.A. 40, Paper No. 5A). Presumably, the examiner considered these references as being less suggestive of appellant's *claimed* invention than those on which the claims were finally rejected, but whether that is true or not seems immaterial since the Patent Office does not rely upon these patents to show that the claims in suit are unpatentable.

d. REJECTION OF CLAIM 51 AS BEING INDEFINITE

The Board affirmed (J.A. 54, pertinent discussion 61) the rejection of claim 51 as being indefinite in that the final means recited in the claim, "means responsive to the vibrations of said diamond for controlling the position of the cutting disc on its planetary (sic) axis," does not coordinate the controlled position of the cutting disc with the grain of the diamond. Claim 51, in other words, does not require that the controlled position of the cutting disc *be in alignment with the grain of the diamond*.

Appellant's brief apparently makes no direct comment on this rejection, but appellant's argument that appellant's invention is a pioneer invention (brief, page 30), and that appellant has a "right to 'means' qualified by functional limitations in combination claims" may have been intended as applicable to the language of claim 51. That appellant's claim 51 is directed to a pioneer invention reasonably may be questioned, in view of the patent to Coleman (De-

fendant Exhibit 1-B), for instance, which shows grain finding apparatus and specifies that differences "in the sound produced" is a physical effect which may be utilized to ascertain the grain of a diamond. But the pioneer status of an invention described in an application, if it existed, would not exempt an application claim from the requirement of 35 U.S.C. 112, second paragraph, that the claim particularly point out and distinctly claim the subject matter of appellant's invention. The rejection of claim 51 on the ground of indefiniteness, affirmed by the Board (J.A. 61), makes unnecessary any discussion of the propriety, or construction, of the description of an element of a claimed combination in terms of a "means" followed by a statement of function; claim 51 does not describe with definiteness *even the desired function* for the control means. This indefiniteness of claim 51 is not, therefore, obviated by the rule of construction set forth in the third paragraph of 35 U.S.C. 112 (appellant's brief, pages 11 and 31); see the discussion of *In re Lundberg et al.*, 44 C.C.P. 909, 915; 244 F.2d 543, 548, *supra*.

e. REJECTION OF CLAIM 51 ON JEARUM IN VIEW OF PLIMMER

The indefiniteness, which was a separate ground for rejection (d) of claim 51, made this claim particularly vulnerable to rejection as being unpatentable over the Jearum patent (Defendant's Exhibit 1-C). Jearum shows a diamond grinder which has a rotary cutting disc which travels in a planetary orbit as it rotates. This planetary travel is such, according to

the patentee, that grinding occurs along the grain of the diamond at least twice in each rotation of the cutting disc about its planetary axis.

The Plimmer patent (Defendant's Exhibit 1-D), as shown under rejection (b) above, utilizes a device for sensing oscillatory vibration of a diamond as a stop means. The examiner (J.A. 54) held that no invention would be required to utilize a vibration responsive means such as that of Plimmer for stopping Jearum's planetary movement. As the Board conceded (J.A. 62), Jearum has no means to stop the planetary movement at a predetermined place. Claim 51, however, *does not require that the planetary movement of the cutting disc be stopped at the proper position for grinding along the grain*. Therefore, the addition of control devices such as that of Plimmer "for controlling some undesigned position" of the disc of Jearum would be, as the Board stated, "purely arbitrary and uninventive."

f. REJECTION OF CLAIM 53 ON BAILEY OR PLIMMER

Claim 53, which was rejected [like claim 1, in rejection (a) above] as being unpatentable over the patent to Bailey (Defendant's Exhibit 1-A) or the patent to Plimmer (Defendant's Exhibit 1-D), claims the combination of (1) "a cutting tool", and (2) "vibration responsive means responsive to vibrations of work piece subject to said cutting tool for controlling said cutting tool with respect to said work piece."

Since Plimmer shows (in Figure 6, for instance) a cutting tool 29 and a control for this cutting tool

actuated by the vibratory contact with a vibration sensing diamond point 102, the only apparent distinction between the device as claimed in claim 53 and the Plimmer device results from the fact that the claim calls for effecting control by vibrations of the work piece whereas Plimmer's device is actuated by vibrations of the sensing diamond which contacts the cutting tool. However, as the examiner pointed out (J.A. 53-54), the diamond sensing point of Plimmer is a work piece in that it will eventually wear out.

In the Bailey patent the crystals being ground are the work pieces and, as shown in Figure 3, the vibrations of these crystals control the cutting tool 2 with respect to the work piece.

g. REJECTION OF CLAIMS 44, 45, 55, 59, AND 67 ON GRODZINSKI

Claims 44, 45, 55, 59, and 67, which were rejected as unpatentable over the Grodzinski publication (Defendant's Exhibit 1-E), are directed to a method of cutting a diamond in which the characteristic vibration of the diamond when it is abraded is utilized to determine the cutting grain of the diamond.

The Grodzinski publication contains the following disclosure:

" * * * After a certain amount of grinding when the stone has lost its original form, it is nearly impossible to find the grain by control and observation alone. In these cases a trial method has to be applied by changing the position of the stone towards the wheel; this is easily

effected in the usual equipment by bending the copper stalk or other adjusting devices. The real cutting of the stone is observed by a special sound. If this is not present the cutter knows that the stone 'does not run.' "

In the prior art, therefore, the grain of a diamond was ascertained by listening for a "special sound" while the diamond is being moved axially and in contact axially with a rotating cutting tool. Since, as indicated above in relation to the rejection (c) on Coleman, "sound" and "vibration" are coordinate terms, the only distinctions between the claimed process and the process disclosed by the publication reside in such expressions as "ascertaining by instrumentation" (claims 44 and 45), "measuring by instrumentation" (claims 55 and 59), and "indicating by instrumentation" (claim 67). Such expressions, as the Board held (J.A. 63), are apparatus limitations which cannot serve to distinguish method claims from the prior art. "It is well settled that the means employed cannot lend patentability to a claimed method." *In re Freeman et al.*, 27 C.C.P.A. 795, 797; 108 F.2d 244, 245.

In the cited *Freeman et al.* case, new and useful results obtained by the substitution of mechanical for manual power were held to be due to the means employed and not to the claimed process. Similarly, in *In re Gill*, 17 C.C.P.A. 678, 681; 136 F.2d 126, 128, a claimed process of inserting pistons, utilizing clamps where formerly the workman's hands had been used, was held to be old and the "new and beneficial results" to be "obtained by the means, and not by the process, employed."

An illustration used by the examiner (J.A. 54) indicates the inadequate basis for patentable distinction provided by terms such as "by instrumentation." A diamond cutter, so unfortunate as to require a hearing aid, who determines the direction in which the stone runs by a special sound makes this determination "by instrumentation."

Appellant adduced as new evidence at the trial a book "Diamond Technology" by Paul Grodzinski (Plaintiff's Exhibit 4). Appellant's purpose in putting this book in evidence, apparently, was to demonstrate that the author believed at the time he wrote the book (some twelve years after the date of the publication of Defendant's Exhibit 1-E) that the actual polishing direction of a diamond must be determined by trial and error (appellant's brief, page 21) and that there is no way to determine the cutting grain of a diamond by scientific measure. Grodzinski's comments in the later book would have no bearing on the anticipatory effect of his previous publication even if they were inconsistent with earlier statements. It is noted, however, that Grodzinski's statements in the later book, as asserted by appellant (brief, page 21), are consistent with his previous disclosure that a cutter observes when a stone "runs", or cuts with the grain, from its special sound. Such a procedure is "by trial and error" and so, too, is appellant's claimed process. Appellant's application and claims are directed to a procedure or apparatus in which the cutting grain is determined by trying the cutting at successive points. The cutting grain is ascertained by these trials and

errors during a cutting operation and not by a scientific determination prior to cutting.

h. REJECTION OF CLAIM 56 ON BAILEY

Claim 56, which was rejected as unpatentable over the patent to Bailey (Defendant's Exhibit 1-A), calls for removing a workpiece having a grain structure from a grinding tool. In this process the vibrations of the workpiece are measured and when these vibrations diminish the workpiece is removed.

The Bailey patent [which was the basis for the rejection (a) above of claim 1] discloses the removal of a piezo-electric crystal from contact with a grinding tool when the vibrations of a certain frequency are obtained. The Board held (J.A. 63) "In view of Bailey's teaching that the character of the vibrations can be used as a guide for indicating the progress of the grinding we see nothing inventive in removing the workpiece whenever the nature of the vibrations indicates that the desired objective has been attained."

NEW EVIDENCE AT TRIAL

Appellant's brief (pages 33 to 39) argues that the District Court failed to give proper weight to the new evidence adduced by appellant at the trial and to the evidence before the Patent Office. The "new" evidence adduced at the trial would not seem to make any substantial contribution to appellant's cause. The excerpts from the transcript, which presumably contain the most pertinent of the evidence, show that it consists of the inventor's arguments, sworn and unsworn, with respect to the reference patents (brief, pages 6,

10, 11), patents not presently relied upon by the Patent Office in the rejection of the claims (brief, page 9), and allowed claims in appellant's application (brief, pages 12 and 13).

CONCLUSION

It is respectfully submitted that, for the reasons indicated hereinabove, the conclusions reached by the tribunals of the Patent Office and the District Court, that the claims in suit are unpatentable to appellant over the patents and the publication identified in the decision of the Board of Appeals and that claim 51 in suit does not definitely define appellant's invention, are correct and have a reasonable basis in the record; and that under the standard of appellate review stated by this Court in *Abbott et al. v. Coe*, 71 App. D. C. 195; 109 F.2d 449, and *Standard Oil Development Co. v. Marzall*, 86 U.S.App.D.C. 210, 214; 181 F.2d 280, 284, the judgment of the District Court should be affirmed.

Respectfully submitted,

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Attorney for the Appellee

ARTHUR H. BEHRENS
Of Counsel

2-16-58

Burton. F. Webb

10 45 am

2d case

REPLY BRIEF FOR APPELLANT

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 14,417

LEWIS A. SIEGEL,

Appellant,

v.

ROBERT C. WATSON,
Commissioner of Patents,

Appellee.

APPEAL FROM THE JUDGMENT OF THE UNITED STATES
DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

*United States Court of Appeals
For the
District of Columbia Circuit*

FILED DEC 29 1958

Joseph W. Stewart
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LEWIS A. SIEGEL, Pro Se
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UNITED STATES COURT OF APPEALS
For The District Of Columbia Circuit

No. 14,417

LEWIS A. SIEGEL,

Appellant,

v.

ROBERT C. WATSON,
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Appellee.

APPEAL FROM THE JUDGMENT OF THE UNITED STATES
DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

REPLY BRIEF FOR APPELLANT

INTRODUCTION

It appears from Appellee's Brief that the basic point of departure between Appellant and Appellee is the patentable significance to be accorded the combination of elements or steps actually described in each of the claims on appeal, and this point will be taken up first. Appellant is also in sharp disagreement with Appellee's discussion of the alleged indefiniteness of claim 51.

In addition, Appellee's Brief contains a number of statements unsupported by the record, they will be taken up serially after a discussion of the two main issues.

THE COMBINATION AS A WHOLE OF THE CLAIMS ON APPEAL
IS OF PATENTABLE SIGNIFICANCE

Each of the apparatus claims to a COMBINATION, on appeal includes two or more of the following elements:

- (1) Dop
- (2) Dop-Holder
- (3) Diamond Holding Means
- (4) Vibration Controlled Dop-Holder
- (5) Vibration Indicator
- (6) Diamond Cutting Disc
- (7) Diamond Cutting Machine
- (8) Vibration Responsive Means
- (9) Motor
- (10) Planetary Axis
- (11) Electric Circuit

(J.A. 40-42).

Such elements are the structure defined in the claims and limits the use of the combination of structure defined to the field of diamond cutting for producing facets on diamonds by abrasion.

To support allegation that claims lack structure Examiner practiced ARBITRARY SUBDIVISION OF SINGLE ELEMENTS.

Board of Appeals held claim 21 "example", Appellant accepts this holding to illustrate Arbitrary Subdivision of Single Elements by Examiner, Claim 21 in Brief for Appellant pages 5-6 (J.A. 41).

The Examiner in referring to Appellant's "Diamond Cutting Disc" finds only a "disc" so that he might allege diamond cutting is functional, notwithstanding Examiner held the same element to be a Diamond Grinding Disc or Skaif when he found the same element in the prior art of Jearum (J.A. 51), thereby applying a double standard for the same element when found in the prior art and when found in Appellant's Application for a Patent.

The Examiner referred to Appellant's element "Dop-Holder" as a "holder" so he might contend this too is not structure.

The Examiner referred to Appellant's element "Vibration Indicating Means" as indicating means so that vibration may be considered a recitation of characteristic and hold that functional too.

The term or name "Dop" of one of the elements in Appellant's claims is limited to cutting or polishing gems while held therein and therefore limits the claim to structure defining apparatus for diamond cutting (J.A. 91-92).

Examiner's Arbitrary Subdivision of Single Elements would leave a verb standing where a noun should stand if read in context and construed as Appellant intended, which is obvious from the specification of said patent application.

In one sense the verb stands for function in contrast to the noun which stands for structure, but many concrete nouns carry within themselves their function also. Examples are "carburetor," "ram," "cutter," etc. Although nouns, they also possess the predicated characteristic of verbs.

An Examiner is not justified in Arbitrary Subdivision of Single Elements by cutting a name in half so that a noun which stands for structure might remain a verb which stands for function so Examiner might hold a claim to be without sufficient structure, therefore, functional or not defining over prior art.

Each of the Process claims are to a combination or sequence of steps not disclosed or suggested in the prior art, moreover, process claims of commensurate scope have been allowed, and held patentable by the Patent Office as well as the Court below.

CLAIM 51 IS NOT INDEFINITE

The Board of Appeals held, (J.A. 61) "While the diamond is mentioned in this claim, it is not recited as an element of the machine but even if it were we see nothing objectionable under the facts of this case in the recitation of means responsive to the vibrations of the diamond for controlling the position of the cutting disc on its planetary axis since it is the vibration of the diamond which produces the control force. It is not readily apparent how else the control could be defined than by reference to the vibrations of the diamond."

Appellant contends the following elements of claim 51 coordinate the controlled position of the cutting disc with the grain of the diamond:
Claim 51 (J.A. 41)

***means for rotating the cutting disc, and means responsive to the vibration of said diamond for controlling the position of the cutting disc on its planetary axis.

Both above means read in context of the complete claim with the specification disclose the whole arrangement to be quite simple.

STATEMENTS IN APPELLEE'S BRIEF BELIEVED TO BE
INACCURATE OR UNSUPPORTED BY THE RECORD

For the sake of brevity, each of the statements to which exception is taken is quoted, followed by a brief comment.

"* * * It is known that when the diamond is being ground in this direction relative to the grain a different character of vibration is produced than when the diamond is being presented to the grinding means at some other angle. * * *(Page 3-4)

While this statement is literally true, it is misleading. Only instant Patent Application now before this Honorable Court discloses

and utilizes this knowledge, there has not been any evidence adduced at the trial in the Court below to show this is or was common knowledge.

"* * * The third paragraph of 35 U.S.C. 112 does not make it unnecessary for "means" claims to particularly point out and distinctly claim the invention. * * *" (Page 5)

The third paragraph of 35 U.S.C. 112 read in the light of the second paragraph of the same section, requires only that the "subject matter" be distinctly claimed of what applicant regards as his invention, as distinguished from distinctly claiming the invention, or minute details thereof.

"* * * appellant emphasizes the inventive features of the specific invention which he disclosed in his specification. * * *" (Page 5)

While this statement is literally true, Appellant also emphasizes features of his invention as defined by specific terms in his claims (see Appellant's Brief, page i, "Statement of Questions Presented," paragraph 3, and "Summary of Argument," page 14, paragraph C).

"* * * Appellant believes * * * No matter how lacking the distinction between the structure defined in the claim and the prior art, an applicant may dispose of a rejection on either the prior art or for indefiniteness of the claim by pointing to the structure actually described in his specification. * * *" (Page 7)

Appellant does not find any foundation in the record of this case for the above statement. Appellant has used terms in his claims that are very limited when read in context and in the light of the specification, and as long as "Diamond Cutting Disc" remains a noun and complete, the terms in claims are very definitive of Appellant's invention as expressed in other very restrictive nouns.

"* * * vibration controlled" (Page 11)

This is only part of a name of a tool referred to in claim 7 (J.A. 40). The complete name of the tool is "Vibration Controlled Dop-Holder."

"* * * a microphone, as a dictionary will confirm, is a device for intensifying feeble sound
* * *" (Page 12)

While this may be literally true, indiscriminate reliance on definitions found in dictionaries can often produce absurd results. Words are used in many senses and often have diametrically opposed meaning, depending upon the sense in which they are used. Appellant's "microphone" is a transducer capable of translating physical movement of a tool to electrical currents corresponding to the variations of the physical movement of the tool and Appellant's specification makes this quite clear, and the term should be construed as Appellant intended it to be construed, and not otherwise.

"* * * appellant had modified his original claims
8 and 16 (J.A. 40, Paper No. 5A)" (Page 15)

The appellant did not modify claim to any degree that changed the substance of the claims, they were merely grammatical corrections, the substance remained the same (J.A. 40).

"* * * It is well settled that the means employed
cannot lend patentability to a claimed method."
(Page 19)

In some cases this may be so, however in instant case before this Honorable Court the method has already been held patentable. Note patentable claims in instant case (J.A. 96-97^{CLAIMS} 57, 62 and 64). Appellant should not be penalized for defining and further restricting method claims with additional structure.

"* * * Such a procedure is 'by trial and error' and so, too, is appellant's claimed process."
(Page 20)

In the above statement Appellant finds "and so, too, is appellant's claimed process" to be quite untrue and without any foundation whatsoever, note all allowed claims in instant case (J.A. 94-97). Appellant determines the cutting grain by a scientific determination prior to cutting.

"* * * Patents not presently relied upon by the Patent Office in the rejection of claims (brief, page 9) * * *" (Page 22)

It appears to Appellant that the Patent Office is still relying on these patents.

CONCLUSION

It is submitted that there is nothing found in Appellee's Brief which alters the submission in the Appellant's Main Brief that the judgment of the Trial Court should be reversed.

Respectfully,

LEWIS A. SIEGEL, Pro Se

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New York 68, N. Y.

Dated: December 23, 1958
New York 68, N. Y.

JOINT APPENDIX

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

*United States Court of Appeals
For the
District of Columbia Circuit*

FILED

AUG 14 1958

Joseph W. Stewart
CLERK

No. 14,417

LEWIS A. SIEGEL,

Appellant,

v.

ROBERT C. WATSON,
COMMISSIONER OF PATENTS,

Appellee.

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES COURT OF APPEALS
For The District Of Columbia Circuit

No. 14,417

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Appellee.

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

JOINT APPENDIX

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JOINT APPENDIX

[Filed July 25, 1958]

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

Lewis A. Siegel,	)	
	)	
Appellant,	)	
	)	
v.	)	Case No. 14,417
	)	
Robert C. Watson,	)	
Commissioner of Patents,	)	
	)	
Appellee.	)	

STIPULATION AS TO CONTENTS
OF JOINT APPENDIX TO BE PRINTED

May it please the Court

It is hereby stipulated by and between the parties hereto, that the following parts of the record in Civil Action No. 2969-54, Lewis A. Siegel v. Robert C. Watson, Commissioner of Patents, in the United States Court for the District of Columbia, to be printed in a separate Joint Appendix

- (1) The Complaint for issuance of Patent filed in said District Court July 12, 1954
- (2) Answer to Complaint filed July 28, 1954
- (3) The following excerpts from Official Transcript of Testimony and Proceedings in said District Court filed June 28, 1957 on page 23 lines 16-20; page 24 lines 5-25; page 25 lines 1-21; page 26 lines 18-19; page 27 lines 3-10; page 32 lines 4-21; page 34 lines 2-24; page 35 lines 22-25; page 36 lines 1-4; page 37 lines 7-11; page 43 lines 4-11; page 45 lines 20-25; page 46 line 1; page 49 lines 22-25; page 50 lines 1-14; page 52 lines 6-17; page 53 lines 17-25; page 54 lines 1-9; page 61 lines 1-2; page 61 lines 8-10; page 62 lines 15-19; page 63 lines 15-20; page 70 lines 21-25; page 71 lines 1-24; page 72 lines 23-26; page 73 lines 1-4; page 73 lines 8-19; page 82 lines 7-19; page 1; page 2;

- (4) The Opinion of Honorable Edward M. Curran, Judge of said District Court, filed November 26, 1957
- (5) Judgment of Honorable Edward M. Curran, Judge of said District Court, filed December 4, 1957
- (6) Motion of Plaintiff for a Judgment N.O.V. or in the alternative a New Trial with P. and A. filed Dec. 13, 1957
- (7) Order overruling motion for Judgment N.O.V. or alternative for New Trial filed January 16, 1958
- (8) Order denying plttf's. motion for Judgment N.O.V. or in the alternative for a new trial filed Jan. 21, 1958
- (9) Notice of Appeal to the United States Court of Appeals for the District of Columbia circuit filed April 14, 1958.
- (10) Order transmitting original papers, exhibits and Transcript to said Court of Appeals filed April 14, 1958.
- (11) Copy of the specification of the Lewis A. Siegel Patent Application Serial No. 153430 entitled Vibration Variation Control which specification is a part of Plaintiff's Exhibit No. 1 in said District Court, and including the following changes made in the original filed specification,
 - (a) the change made in claim 8 by the amendment of February 13, 1951
(Amendment A Paper No. 5)
 - (b) the change made in claim 16 by the amendment of February 13, 1951
(Amendment A Paper No. 5)
- (12) All allowed claims in case.
- (13) All rejected claims before District Court
- (14) Final Rejection (paper No. 8)
- (15) Examiner's Statement (Paper No. 14)
- (16) Boards Decision (Paper No. 18)
- (17) Boards Decision on Reconsideration (Paper No. 20)
- (18) Motion to File Three Sets of Exhibits
- (19) Excerpts from Brief For The Defendant in said District Court page 20 lines 15-28; page 21 lines 1-5;

- (20) Official Action Examiner's Letter of Aug. 16, 1950
Paper No. 3
- (21) Excerpts from Brief for Lewis A. Siegel, Plaintiff before
said District Court filed April 1, 1957
page 20 line 21 to page 23 line 39;
page 25 line 8 to page 29;
page 10 line 11 to page 11 line 19;
page 18 line 6 to end of page;
page 30 to page 36 line 21;
page 38 to page 46 line 32;
- (22) Reply To Examiner's Statement (Paper No. 15) June 1, 1953.
Part of Plaintiff's Exhibit 1 in said District Court.
- (23) Claims 8 and 16 from original application.
- (24) This stipulation as to contents of joint appendix to be
printed.
- (25) Docket entries.

July 25, 1958

/s/ Lewis A. Siegel,
Appellant Pro se

July 25, 1958

/s/ Clarence W. Moore
Solicitor, United States Patent Office
Washington 25, D. C.
Attorney for Defendant-Appellee

[Filed July 12, 1954]

IN THE UNITED STATES DISTRICT COURT
DISTRICT OF COLUMBIA

LEWIS A. SIEGEL,
2877 Grand Concourse
New York 68, New York,

Plaintiff

v.

ROBERT C. WATSON,
Commissioner of Patents,

Defendant.

Civil Action No. 2969-54

COMPLAINT

TO THE HONORABLE JUDGES OF THE DISTRICT COURT OF
THE UNITED STATES FOR THE DISTRICT OF COLUMBIA:

Lewis A. Siegel, the Plaintiff herein, brings this Complaint against Robert C. Watson, Commissioner of Patents, Defendant, and alleges that:

1. The Plaintiff herein, Lewis A. Siegel, is a resident of 2877 Grand Concourse, New York 68, New York.

2. The Defendant, Robert C. Watson, is the United States Commissioner of Patents, and is officially a resident of Washington, in the District of Columbia, within the jurisdiction of this Court.

3. This action is brought under the provisions of the statute (Title 35, U.S.C.A. Section 145, Patent Codification Act of 1952).

4. On or about the 1st day of April, 1950, plaintiff, Lewis A. Siegel, duly made application in writing to the United States Patent Office for the grant of Letters Patent to him for an apparatus and method for cutting diamonds, which application was given Serial Number 153,430.

5. Said application, Serial Number 153,430 contains the claims to which Plaintiff believes he is entitled, said claims, being numbered 1, 7, 21, 43, 44, 45, 46, 49, 50, 51, 53, 55, 56, 58, 59, 67 and 68.

6. Thereafter, said application for Letters Patent was examined by the Examiner in charge thereof who, on the 12th day of August, 1952, finally rejected the claims hereinabove set forth; On the 10th day of February, 1953 an Appeal was taken from the decision of the Examiner to the Board of Appeals, which affirmed the rejection of the Examiner in a Decision dated April 30, 1954; On Petition For Reconsideration dated May 28, 1954 the Board of Appeals refused to reverse their Decision on the 28th day of June 1954, all of which appears in the Patent Office file relating to said application, profert of which is made.

7. Plaintiff alleges that the decision of the Board of Appeals adjudging the Plaintiff not entitled to Letters Patent for an apparatus and method for cutting diamonds, as recited in said claims numbered 1, 7, 21, 43, 44, 45, 46, 49, 50, 51, 53, 55, 56, 58, 59, 67 and 68 of said application, Serial Number 153, 430 was erroneous and contrary to law.

8. Plaintiff further alleges that no appeal has been taken by him to the United States Court of Customs and Patent Appeals from said

refusal of the Commissioner of Patents to issue said Letters Patent, and that the Complaint herein is filed within thirty (30) days following the final decision of the Board of Appeals refusing to allow the aforesaid claims and issue Letters Patent on apparatus and method for cutting diamonds.

9. Plaintiff makes profert of a certified copy of the aforesaid application for Letters Patent, Serial Number 153,430, and all proceedings and papers in the file thereof, together with certified copies of the patents forming the basis for the aforesaid decision refusing to allow the claims and issue Letters Patent on said invention, said certified copies to be produced as and when this Honorable Court shall direct.

Wherefore, Plaintiff respectfully prays as follows:

A. For a decree that Plaintiff is entitled to receive Letters Patent for the apparatus and method for cutting diamonds, shown and described in the aforesaid application Serial Number 153,430, in due form of law as prescribed by the Statutes.

B. For a decree pursuant to the provisions of the statute (Title 35 U.S.C.A. Section 145 of the Patent Codification Act of 1952) authorizing the Commissioner of Patents to issue Letters Patent to Plaintiff on said application Serial Number 153,430 and claims 1, 7, 21, 43, 44, 45, 46, 49, 50, 51, 53, 55, 56, 58, 59, 67 and 68 thereof, in due form of law and as prescribed by the Statute.

C. That Plaintiff have such other and further relief as the nature of this action may admit or require and as may be necessary, just and equitable.

Respectfully,

New York 68, N. Y.

July 12, 1954

/s/ LEWIS A. SIEGEL, Plaintiff
2877 Grand Concourse
New York 68, N. Y.

[Filed July 28, 1954]

* * *

ANSWER TO THE COMPLAINT

To the Honorable the Judges of the United States District Court for the District of Columbia.

1, 2, 3, 4, 5, 6. The defendant admits the allegations of paragraphs 1 to 6, inclusive, of the complaint.

7. He denies the allegations of paragraph 7.

8, 9. He admits the allegations of paragraphs 8 and 9.

FURTHER ANSWERING, the defendant states that the plaintiff is not entitled to a patent containing any of the claims here involved for the reasons given and in view of the references cited in the Examiner's Statement and decisions of the Board of Appeals in the plaintiff's application. Profert of copies of the said statement, decisions, and references is hereby made.

Respectfully submitted,

/s/ E. L. Reynolds
Solicitor, U. S. Patent Office,
Attorney for Defendant.

July 27, 1954.

[Certificate of Service]

EXCERPTS FROM TRANSCRIPT OF PROCEEDINGS

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Washington, D. C.

November 15, 1956

The above-entitled action came on for trial before The Honorable EDWARD M. CURRAN, United States District Judge, at 10 o'clock a. m.

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INDEX

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MR. SIEGEL: So besides not being physically capable of cutting a diamond, the Bailey device could not determine any vibrations of the diamond if it was put on there. Besides not having piezo-electric qualities, there are no means on the Bailey device to even hold a diamond in any position.

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THE COURT: Mr. Miller, the Board of Appeals said:

"We fully agree with the Examiner that the reference to a 'diamond holding means' in the claim does not limit the claim to an apparatus for grinding diamonds.'"

What are you going to grind?

MR. MILLER: Piezo-electric crystal. That is, the preamble claim isn't any element of the combination which is claimed at all; it is just the name applied to it.

THE COURT: It doesn't say anything about the preamble. It says:

"We fully agree with the Examiner that the reference to a 'diamond holding means' in the claim does not limit the claim to an apparatus for grinding diamonds."

MR. MILLER: Yes.

THE COURT: Is it in the claim?

MR. MILLER: Yes, it is in the claim.

THE COURT: If it is in the claim that it is a diamond holding means --

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MR. MILLER: The structure of the device is determined by the elements which compose it.

THE COURT: You mean that the report might have been different if in his claim he said "a diamond holding means for grinding diamonds?"

MR. MILLER: No; that would merely state the purpose for which it was. He would have to state the structure which made it different. For example, if he uses an amplifier here and uses a relay there, well and good, that element isn't part of the prior art.

THE COURT: Well, the Board of Appeals says that that language does not limit the claim to an apparatus for grinding diamonds. How do you limit a claim?

MR. MILLER: By putting in positively the structure of the element you rely on to make the difference over what structure is disclosed in the reference cited against the claim, Your Honor.

THE COURT: Bailey has nothing to do with grinding diamonds.

MR. MILLER: It is grinding; it is close to that extent that it is grinding.

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26 MR. SIEGEL: Plaintiff is not concerned in his device in any way determining the size of a diamond.

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27 As a matter of fact the Patent Office at one time cited against the plaintiff a patent -- I will have this marked Plaintiff's Exhibit No. 2.

MR. MILLER: No objection.

(Patent No. 1,458,768, June 12, 1923, to E. F. A. C. Leperre, marked and received in evidence as Plaintiff's Exhibit No. 2.)

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31 LEWIS A. SIEGEL,
being first duly sworn, testified as follows:

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32 In regard to the Leperre invention which is supposed to indicate the progress of grinding a diamond and determining its size, plaintiff would like to state that Leperre functions on the principle that when the diamond diminishes the device will lower.

It is the plaintiff's contention that that device will lower even if the diamond does not diminish in size, because if the diamond is not properly oriented with respect to the abrasive grains of the cutting disc then that cutting disc will diminish in size and the diamond will wear a hole into the cutting disc and that will cause the diamond and the tool to lower anyway.

These points have been made to the Examiner in the Patent Office and they have been acknowledged by the Patent Office as facts.

Now this is one patent that the Patent Office dropped as an anticipation after these discussions between the plaintiff and the Examiner in the Patent Office.

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34 MR. SIEGEL: * * * To further inform the Court to the extent that the Patent Office dropped devices purporting to determine grain and to indicate dimensions, the plaintiff would like to submit Exhibit 3.

MR. MILLER: I object, Your Honor. I don't see why Your Honor should be burdened with patents that the Patent Office isn't relying on at all.

THE COURT: I don't know; if the Patent Office made a mistake in putting these patents up at one time, and then abandoning them, that may have a bearing on it.

MR. SIEGEL: In submitting the next patent that was cited against plaintiff I submit Patent No. 1,166,006 to S. M. Schenkein and O. P. R. Lehmann.

THE COURT: They were also references that were dropped?

MR. SIEGEL: They were references as anticipation against plaintiff's device.

THE COURT: It will be received.

(Patent No. 1,166,006, dated December 28, 1915, to S. M. Schenkein and O. P. R. Lehmann, marked and received in evidence as Plaintiff's Exhibit No. 3.)

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35 MR. SIEGEL: This patent was also dropped as an anticipation because, as plaintiff pointed out, that dial indicator would move under any circumstances if the grain were properly oriented; it would diminish and the dial indicator would function. If it weren't properly
36 oriented then the grinding wheel would diminish in size and the diamond would lower into the cavity formed therein, and your dial indicator would still move and give a false reading.

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37 MR. SIEGEL: Plaintiff would like at this time to submit as evidence Exhibit No. 4.

THE COURT: What is it?

MR. SIEGEL: Exhibit 4 is a book by Paul Grodzinski, the title of which reads "Diamond Technology."

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43 MR. SIEGEL: On page 414, the eighth line down, the author writes,
and I quote:

"But there is no doubt that the present diamond factory and its organization is based on the general industrial tendency of the middle of last century. The only recent technical improvements were the introduction of the bruting machine after about 1880 and the sawing machine about 1900."

* * * * *

45 However, twelve years later the same author writes on page 195 of "Diamond Technology.":

"Nevertheless, as has been pointed out in the literature (Eppler, 1925), diamond polishers know that from crystallographically preferred lines of attack, the actual polishing direction must be determined by trial and error."

* * * * *

49 Incidentally this patent was not cited against plaintiff's invention. But it is important to note that three years after the patent cited, namely, C. J. Coleman, No. 1,168,858, Coleman again attempted to devise a diamond-cutting machine capable of determining the cutting
50 grain of a diamond. This later invention by C. J. Coleman is Patent No. 1,313,260, which plaintiff would like to present at this time as Plaintiff's Exhibit No. 5.

(C. J. Coleman Patent No. 1,313,260
patented August 19, 1919, marked and
received in evidence as Plaintiff's
Exhibit No. 5.)

This patent, Exhibit No. 5, illustrates some of the other inventions in the prior art, including those that have been advocated against the invention as anticipations. It is primarily a device involving the use of a depth gauge, but the Patent Office discarded that as prior art, * * *

* * * * *

52 Does Your Honor have the Coleman patent No. 1,168,858? This is also cited against the plaintiff. The plaintiff would like at this time just to speak generally on this patent, and later go into the claims by the Examiner in his writings, so that the Court may better understand some of the details later.

C. J. Coleman's machine doesn't measure vibrations of the diamonds that is being cut; doesn't measure vibrations of the tool holding the diamond. There is a suggestion in that patent that it might possibly indicate when the grain is being cut by measuring the rotary motion which, in turning on the motor, measures the resistance of the rotating element.

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53 He states on page 2, line 59:

"In the present machine for finding the grain of diamonds the same diamond holding head is employed to hold the diamond on the preliminary lap 1, and on the friction member 4, the diamond preferably being rotated on an axis perpendicular to the preliminary lap 1, during the formation of the small initial facet, such rotation enabling the grain of the diamond to be taken advantage of periodically during each rotation of the diamond, for more expeditiously forming the small facet."

54

Here is a man in his own patent, in describing the use of the machine, tells, (1), that there is a preliminary lap which must be used to grind the diamond, regardless of the grain, by continuously rotating the stone and hoping that periodically he will run into the proper grain orientation which will be present for only one or two degrees in each rotation.

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61 Plaintiff would like to go to the Plimmer patent 1,891,777.

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This device is supposed to determine the size of the workpiece or indicate when the workpiece has reached a critical dimension.

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62 The point is that this is merely a sizing device in a different sense, for this work, and then the other device that the Patent Office had picked out -- they didn't pick this invention out because it was for cutting diamonds because this machine cannot cut a diamond.

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63 A diamond cannot be continuously fed on any machine by a screw feed because the size of the facet is a critical factor, and as that size

changes if you were to exert a constant feed of a diamond to an abrasive means you would either jeopardize the diamond or you would spoil your machine; something would break.

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70 Plaintiff would like to point out something that was brought up by Mr. Miller for the Patent Office that plaintiff did make an invention, and as Mr. Miller brought up the Patent Office did allow a number of claims, and for the benefit of the Court, plaintiff would like to read a few of
71 those claims.

THE COURT: They were allowed?

MR. SIEGEL: Yes.

THE COURT: No, I am not going to listen to claims that were allowed. You have had your day in court on that. You have them. I am only going to pass on the claims that were disallowed.

MR. SIEGEL: The only reason I would have liked to have read that is because I feel that the allowance of a broad claim can certainly have a very definite bearing on the rejection of a much narrower claim with a great many structural limitations, and I thought it would have helped the Judge to view it in that light if he would consent to listen to perhaps one or two claims.

THE COURT: All right; go ahead.

MR. SIEGEL: Applicant has been allowed Claim 52. It will be found on page 65 of the certified copy of the record. It reads:

"In combination, a dop, a dop holder, supporting said dop, means for rotating said dop in said dop holders, and means responsive to vibration of said dop holder for controlling first said means and, thereby, the extent of rotation of the dop in said dop holder."

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72 * * * the Patent office allowed Claim 54, page 156 of your copy, Your Honor:

"In a diamond cutting machine, a cutting disc rotatable relative to a workpiece, a vibration indicator adjacent work-

73 piece, a planetary drive for rotating said cutting disc and an energizing means for said drive responsive to the output of said vibration indicator."

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Now plaintiff would like to read Claim 57 on page 67 of Your Honor's copy:

"The method of grinding a gem with the aid of a rotating tool having an abrasive surface which comprised urging said gem against said surface, measuring by instrument vibrations executed by said gem in response to excitation by said abrasive surface, and rotating said gem with respect to said surface upon the degree of vibrations departing from a predetermined value."

That, Your Honor, is a claim for a method that has been allowed by the Patent Office.

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82 MR. MILLER: If it please the Court, I handed up in the beginning my folder. I would like them introduced as Defendant's Exhibit No. 1, and that will be all the evidence on behalf of the Patent Office.

THE COURT: That will be received.

(Patent Office folder containing Items A, B, C, D, E, F, G, H, and I marked and received in evidence as Defendant's Exhibit No. 1.)

THE COURT: I then have the certified copy of the record before the Patent Office and also the exhibits of the plaintiff, and the exhibits of the defendant, and the plaintiff's book.

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[Filed Nov. 26, 1957]

OPINION

This is a civil action brought by the plaintiff, Lewis A. Siegel, pursuant to 35 U.S.C. 145 to authorize the defendant, Robert C. Watson, Commissioner of Patents, to issue to plaintiff Letters Patent containing

claims 1, 7, 21, 43, 44, 45, 46, 49, 50, 51, 53, 55, 56, 58, 59, 67 and 68 of plaintiff's application Serial No. 153,430, entitled "Vibration Variation Control", filed April 1, 1950.

These claims were rejected on one or both of two grounds, (1) as being unpatentable over the prior art, or (2) as being functional and indefinite or as otherwise failing to point out plaintiff's invention with the particularity required by 35 U.S.C. 112, or its predecessor, Revised Statutes, Section 4888.

The application relates to a method and apparatus for cutting, grinding, lapping or polishing diamonds or other substances having a grain structure. The diamond to be cut is presented to a rotating cutting disc in a certain direction relative to the "cutting grain" of the diamond in order that the diamond may be cut. Defendant concedes that when the diamond is being ground in this direction a different character of vibration is produced than when the diamond is being presented to the grinding means at some other angle. Plaintiff uses this difference to align the diamond in a cutting direction relative to the cutting disc and to keep the diamond and the cutting disc in this relationship.

This is accomplished in plaintiff's apparatus by connecting a microphone to the diamond holding means and causing a current to flow through the microphone. The current will vary in amount with the degree of vibration, increasing when the diamond is being cut on the grain and decreasing when the diamond is being ground at an angle to the grain. This current is passed through an ammeter, which shows the amount of current flowing. The needle of the ammeter is the means for opening or closing an electric power circuit which may, according to plaintiff's application (1) drive an electric motor which rotates the diamond holder, (2) actuate a solenoid latch to cause the diamond to be lifted out of engagement with a cutting disc, or (3) drive an electric motor which causes the rotating cutting disc to move in a planetary path around the diamond being cut while maintaining cutting contact with it.

Defendant contends that the basic shortcoming of the claims is a failure to properly define the invention. This failure, according to the defendant, resulted in certain claims reading on the prior art or constituting themselves a basis for rejection. Other claims were allowed by the Examiner and the defendant concedes that the plaintiff's apparatus and process were regarded as patentable inventions, but contends that this circumstance does not confer on the plaintiff the privilege of claiming these inventions in such broad terms as to cover other known devices, or in such functional or indefinite terms as to cover the results achieved by plaintiff's devices in place of the actual means for obtaining these results. (Emphasis supplied).

Many of the rejections of the claims involve the question of whether a functional expression in the claim furnishes a patentable distinction over the prior art or distinctly points out and claims the novel features of plaintiff's device, as required by 35 U.S.C. 112.

This Section is as follows:

"The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

"The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

"An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

July 19, 1952, c. 950, sec. 1, 66 Stat. 798."

Plaintiff takes the position that the last paragraph of the aforementioned Section sanctions the use in the claims of functional expressions of general results as distinctions over the prior art, or as adequate descriptions of the essential elements. If plaintiff's contention is correct it would mean that under the language of the last paragraph

of 35 U.S.C. 112, it would be proper to look to purely functional limitations expressed in the claims for novelty to support patentability. This principle was rejected in In re Arbeit et al., 41 C.C.P.A. 719, 206 F. 2d 947. The Court, in respect to the third paragraph of Section 112, said:

"* * * It seems obvious to us that a construction of that paragraph, such as appellant contends for, would render it wholly inconsistent with the first and second paragraphs which, like former R.S. 4888, are explicit and mandatory in requiring a written description expressed in 'full, clear, concise and exact terms' in the specification, and so set forth in the claims. * * *"

It follows that all three paragraphs of 35 U.S.C. 112 must be read and construed together.

Claim 46 calls for "a vibration indicating tong for diamond cutting." The Patent Office rejected this claim as being functional and indefinite. This claim describes no specific structure or means for accomplishing the indicating function. It, therefore, follows that the principle enunciated in In re Gardner, 32 App. D.C. 249, is applicable. There the Court stated:

"It is well-settled law that a patent cannot issue for a result sought to be accomplished by the inventor of a machine, but only for the mechanical means or instrumentalities by which that result is to be obtained. One cannot describe a machine which will perform a certain function, and then claim the function itself, and all other machines that may be invented by others to perform the same function."

I therefore hold that claim 46 is functional and indefinite.

In claim 51 the final means recited is "means responsive to the vibrations of said diamond for controlling (sic) the position of the cutting disc on its planetary (sic) axis." This claim does not definitely describe the desired function for the control means. Claim 51 merely states a result as far as the control of the position of cutting a diamond is concerned. I therefore hold that claim 51 is indefinite.

Claim 58 reads as follows: "Remote observation, remote control of diamond cutting;" and claim 68 reads: "A process utilizing variation of vibration caused by diamond against abrasive means to actuate

controlling (sic) devices." These two claims do not point out the plaintiff's invention with the particularity required by 35 U.S.C. 112. As pointed out above, the third paragraph of Section 112 must be read together with the second paragraph of Section 112. This Section provides no basis for defining an invention in terms of the general result which the inventor seeks to accomplish. I hold therefore that Claims 58 and 68 fail to point out plaintiff's invention with sufficient particularity so as to meet the requirements of 35 U.S.C. 112.

Claim 1 is directed to a combination of a "vibration indicator connected to a diamond holding means." This combination is not restricted to any particular utility and there is no requirement that it function in any particular manner in relation to the other elements.

The patent to Plimmer No. 1,891,777, granted December 20, 1932 shows a grinding machine with a means for stopping the travel, or feed, of a grinding wheel toward a work piece when this work piece has been reduced to a predetermined size. The device for stopping the feed is a diamond mounted on an armature which moves in a generator which generates a current flowing through a current flow meter. The contact of the diamond with the grinding wheel causes oscillatory vibration, which causes the generation of a current measured by the current flow meter. Claim 1 reads on the Plimmer generator armature which holds a diamond connected with a current flow meter which indicates oscillatory vibration. The language of a claim must differentiate inventively over the prior art. The reference to a "diamond holding means" in claim 1 does not limit the claim to an apparatus for grinding diamonds. It follows therefore that claim 1 is unpatentable over the patent to Plimmer.

Claim 7 reads as follows: "A vibration controlled dop holder having automatically acting dop rotating means adapted to rotate the dop to the cutting grain position of the diamond in said dop relative to said cutting disc." This claim calls for a dop holder and an "automatically acting" means for rotating this dop holder. Furthermore the dop holder is "vibration controlled."

The patent to Coleman No. 1,168,858, granted January 8, 1916, shows a diamond set in a dop head, a diamond holding head, which has

a vertical main shaft which is driven through worm gearing by an electric motor. The rotation of the dop being an electric motor, the dop rotating means is "automatically acting." Coleman discloses that the cutting grain of the diamond being rotated may be determined by the differences in sound produced.

Claim 7 does not recite, or point to, any structure which would give any vibration control and therefore the phrase "vibration control" imports no patentable distinction over Coleman's device. The plaintiff attempts to distinguish between "sound" and "vibration." The Board in its decision on reconsideration pointed out that it is common knowledge that sound and vibration are correlated. Kimball, in his work on "College Physics", copyrighted November 1923, stated: "All sources of sound are vibrating bodies capable of setting up air vibrations." It follows that claim 7 is unpatentable over the patent to Coleman.

Claims 21, 43, 49 and 50 were rejected by the Patent Office as being unpatentable over Coleman in view of Plimmer. Insofar as these claims are concerned the limitations relied upon by the plaintiff to avoid the references are functional recitations of what plaintiff's device does rather than what it is. Plaintiff's position is that there is no reference which meets the underlying concept of his invention and the Patent Office is not justified in combining references to build up an anticipation. The statement in Coleman that the grain of a diamond may be determined by "differences in sound produced" would suggest to those skilled in the art that a vibration responsive means disclosed by Plimmer could be substituted for the friction responsive means disclosed by Coleman without invention. It follows therefore that claims 21, 43, 49 and 50 are unpatentable over Coleman in view of Plimmer.

Claim 53 reads as follows: "In combining a cutting tool vibration responsive means responsive to vibrations of work piece subject to said cutting tool for controlling (sic) said cutting tool with respect to said work piece." In the patent to Bailey, No. 2,340,843, granted February 1, 1944, the crystals being ground are the work pieces and the vibrations of these crystals control the cutting tool with respect to the work pieces.

I therefore hold that claim 53 is unpatentable over the patent to Bailey.

Claim 56 calls for a "process of removing a work piece having a grain structure from a grinding tool." The vibrations of the work piece are measured by instrumentation and when the vibrations diminish the work piece is removed. The patent to Bailey, supra, discloses the removal of a piezo-electric crystal from contact with a grinding tool, when vibrations of a certain frequency are obtained. Thus Bailey taught that the character of the vibrations could be used as a guide for determining the progress of the grinding. The fact that the work piece is removed whenever the vibrations indicate that the desired object has been obtained is not invention. I therefore hold that claim 56 is unpatentable over the patent of Bailey.

Claims 44, 45, 55, 59 and 67 are drawn to a method of grinding diamonds in which certain characteristic vibrations are used in determining the proper position of the diamond in relation to the grinding disc in order that the grinding will be along the grain of the diamond. The Patent Office rejected these claims as unpatentable over the publication "Diamond and Gem Stone Industrial Production" by Paul Grodzinski, N.A.G. Press Ltd., London 1942. The Patent Office took the position that the publication discloses that it was old in the art to orient a diamond according to sound characteristics in order to grind along the grain. Plaintiff's position is that the publication does not teach that it is old to position a diamond relative to a tool by means of the characteristic sound emitted by contact between the tool and the diamond. The publication states: " . . . The real cutting of the stone is observed by a special sound. If this is not present the cutter knows that the stone 'does not run'." From this it seems clear that a person skilled in the art will change the position of the diamond to the stone until the characteristic sound indicating efficient cutting is heard. In the prior art the grain of the diamond was determined by a "special sound." "Sound" and "vibration" being coordinated terms, it follows that the only distinctions between plaintiff's process and the process disclosed in the publication are contained in such expressions as "ascertaining", "measuring" and

"indicating by instrumentation." A statement that a device is operated automatically rather than manually is not a statement of invention. It follows therefore that claims 44, 45, 55, 59 and 67 are unpatentable over the aforementioned publication.

This is a most difficult case which involves intricate and technical questions. "The Patent Office has the equipment for deciding intricate and technical questions * * *." Robertson v. Cooper, 4 Cir. 46 F. 2d. 766, 768.

In Esso Standard Oil Company v. Sun Oil Company, 97 U. S. App. D. C. 154, 157, the Court said:

"In patent cases a finding of fact by the Patent Office as to priority of invention . . . must be accepted as controlling, unless the contrary is established by evidence' which, in character and amount carries thorough conviction.' Morgan v. Daniels, 1894, 153 U. S. 120, 125, 14 S. Ct. 772, 38 L. Ed. 657; Yale Electric Corp. v. Robertson, 2 Cir. 1928, 26 F. 2d. 972, 973; Century Distilling Co. v. Continental Distilling Co., 3 Cir., 1939, 106 F. 2d 486, 489; Safeway Stores v. Dunnell, 9 Cir., 1949, 172 F. 2d 649, 652-653."

In Morgan v. Daniels, supra, the Supreme Court held that "a mere preponderance of the evidence" is not enough to justify reversing the Patent Office and deciding that an applicant is entitled to a patent. In Robertson v. Cooper, supra, the Court said "While the judgment of the Patent Office officials is not absolutely binding on the Courts, it is entitled to great weight, and is to be overcome by clear proof of mistake."

There is a presumption that the Patent Office is right and I find in this case that the evidence submitted by the plaintiff has not overcome the presumption "by clear proof of mistake." I therefore find for the defendant.

The findings of fact and conclusions of law being contained in this opinion, no formal findings and conclusions are necessary. Counsel for the defendant will prepare the proper judgment not inconsistent with this opinion.

/s/ Edward M. Curran
Judge

[Filed Dec. 4, 1957]

JUDGMENT

This action came on to be heard at the October 1956 term, and thereupon, upon consideration thereof, it is this 4th day of December, 1957

ADJUDGED that the complaint be and it is hereby dismissed, with costs against plaintiff.

/s/ Edward M. Curran
Judge

[Certificate of Service]

[Filed Dec. 13, 1957]

MOTION OF PLAINTIFF FOR A JUDGMENT NOTWITHSTANDING
THE VERDICT FOR DEFENDANT OR IN THE ALTERNATIVE A
NEW TRIAL

Comes now the plaintiff and moves the Court to grant to it a new finding of fact and judgment for plaintiff notwithstanding the verdict for defendant or in the alternative, a new trial. In support of said motion, it refers to the points and authorities attached hereto which it prays to be read as a part hereof.

/s/ Lewis A. Siegel, Pro. Per.
2877 Grand Concourse
New York 68, N. Y.
Sedgwick 3-2354

Receipt of a copy of the "Motion of plaintiff for a judgment notwithstanding the verdict for defendant or in the alternative a new trial", dated December 13, 1957, acknowledged this ____ day of December 1957

/s/ C. W. Moore
Solicitor, U. S. Patent Office
Attorney for Defendant

[Filed Dec. 13, 1957]

POINTS AND AUTHORITIES IN SUPPORT OF MOTION

Rule 50 (b), 52 (b) and 59 (a) Federal Rules of Civil Procedure:

The verdict of the Court in this case was contrary to the weight of the evidence and findings of fact. Plaintiff does not find any

foundation in fact or law in the record of this case to support that part of the Opinion of the Court dated November 26, 1957 which reads as follows:

"Plaintiff takes the position that the last paragraph of the aforementioned Section sanctions the use in the claim of functional expressions of general results as distinctions over the prior art, or as adequate descriptions of the essential elements."

* * * * *

"I therefore hold that claim 46 is functional and indefinite."

*** * * * *

"I therefore hold that claim 51 is indefinite."

* * * * *

"I hold therefore that claims 58 and 68 fail to point out plaintiff's invention with sufficient particularity so as to meet the requirements of 35 U. S. C. 112."

* * * * *

"Claim 1 is directed to a combination of a 'vibration indicator connected to a diamond holding means.' This combination is not restricted to any particular utility and there is no requirement that it function in any particular method in relation to the other elements."

* * * * *

"It follows therefore that claim 1 is unpatentable over the patent to Plimmer."

* * * * *

"This claim calls for a dop holder and an 'automatically acting' means for rotating this dop holder."

* * * * *

"The rotation of the dop being an electric motor, the dop rotating means is 'automatically acting.'"

* * * * *

"Claim 7 does not recite, or point to, any structure which would give any vibration control and therefore the phrase 'vibration control' imports no patentable distinction over Coleman's device."

* * * * *

"It follows that claim 7 is unpatentable over the patent to Coleman."

* * * * *

"Insofar as these claims are concerned the limitations relied upon by the plaintiff to avoid the references are functional recitations of what plaintiff's device does rather than what it is."

* * * * *

"The statement in Coleman that the grain of a diamond may be determined by 'differences in sound produced'

would suggest to those skilled in the art that a vibration responsive means disclosed by Plimmer could be substituted for the friction responsive means disclosed by Coleman without invention."

* * * * *

"It follows therefore that claims 21, 43, 49 and 50 are unpatentable over Coleman in view of Plimmer."

* * * * *

"I therefore hold that claim 53 is unpatentable over the patent to Bailey."

* * * * *

"The fact that the workpiece is removed whenever the vibrations indicate that the desired object has been obtained is not invention. I therefore hold that claim 56 is unpatentable over the patent of Bailey."

* * * * *

"Plaintiff's position is that the publication does not teach that it is old to position a diamond relative to a tool by means of the characteristic sound emitted by contact between the tool and the diamond."

* * * * *

"'Sound' and 'vibration' being coordinated terms, it follows that the only distinctions between plaintiff's process and the process disclosed in the publication are contained in such expressions as 'ascertaining', 'measuring' and 'indicating by instrumentation'."

* * * * *

"A statement that a device is operated automatically rather than manually is not a statement of invention."

* * * * *

"It follows therefore that claims 44, 45, 55, 59 and 67 are unpatentable over the aforementioned publication."

* * * * *

"This is a most difficult case which involves intricate and technical questions."

* * * * *

"The Patent Office has the equipment for deciding intricate and technical questions ***."

* * * * *

"Robertson v. Cooper, 4 Cir. 46 F. 2d. 766, 768.
* * * Esso Standard Oil Company v. Sun Oil Company,
97 U.S. App. D.C. 154, 157, * * * Morgan v. Daniels,
1894, 153 U. S. 120, 125, 14 S. Ct. 772, 38 L. Ed. 657;"

* * * * *

"There is a presumption that the Patent Office is right and I find in this case that the evidence submitted by the plaintiff has not overcome the presumption 'by clear proof of mistake.' I therefore find for the defendant."

From the above portions of the Opinion, the Court, it would appear, has gained a mistaken impression as to the position plaintiff takes with respect to the last paragraph of section 112 of title 35. Plaintiff's "Brief" and "Reply Brief" are not the foundation for the Court's mistaken impression, for they disclose a view point opposed to this Court's misconception of plaintiff's position.

With respect to claim 46 "vibration indicating tong" being only a part of the claim, however, is the instrumentalities by which the result is to be obtained.

With respect to claim 51 fully covered in "Brief for Plaintiff" on pages 54 and 55, however the Decision of the Board of Appeals stated:

"means responsive to the vibrations of the diamond for controlling the position of the cutting disc on its planetary axis since it is the vibration of the diamond which produces the control force. It is not readily apparent how else the control could be defined than by reference to the vibrations of the diamond."

The Board of Appeals seemed to feel the control means was properly defined in claim 51.

Upon closer inspection claims 58 and 68 as explained in pages 58 to 62 of plaintiff's "brief" disclose a sequence of steps and do comply with 35 U. S. C. 112. These claims do not seem to define a result.

Claim 1 is a "Combination" claim. In combination claims under 35 U. S. C. 112 "Means" or "Elements" are to be construed as the elements or means disclosed in the specification or their equivalents.

Plimmer No. 1,891,777 is not a proper reference against claim 1. Since claim 1 is a combination claim, any means in said claim must be the means disclosed in the specification or its equivalent. Plimmer is not directed to the problem with which plaintiff is concerned, so stated the Board of Appeals all of which is fully explained on page 30 of Brief for plaintiff, therefore it is not a valid reference.

Claim 7 does not call for rotating the dop holder, but calls for rotating the dop.

Coleman may have a motor for rotating the dop holder of Coleman, however there is nothing automatic about it, it is a complete manual

control, because the work must be positioned and the motor must be manually started and manually stopped.

With respect to claim 7 the Court's Opinion is opposed to all findings of fact and law disclosed in plaintiff's "Brief" particularly on pages 46 to 49 of said "Brief".

With respect to any rejection of claims 21, 43, 49 and 50 over Coleman in view of Plimmer, it should be noted that the Board of Appeals held Plimmer was not concerned with problem to which plaintiff applied himself, moreover Coleman is over 40 years old and any 'sound' referred to in Coleman was not concerned with Coleman's invention but was merely a speculative and vague prophecy. Vibration instrumentation and Coleman's invention are both over 40 years old and have been available to the public these many years without any one seeing any suggestion of plaintiff's invention in Plimmer or any other devices.

Claim 53 is a combination claim, therefore its structure or means are the means disclosed in the specification, under 35 U. S. C. 112, moreover the Board of Appeals ruled Bailey patent was not concerned with the problem to which plaintiff applied himself.

With respect to claim 56 Plaintiff notes this is a combination claim involving a sequence of steps sufficiently described to distinguish from the Bailey reference, which was also ruled by the Board of Appeals as not pertaining to the object or problem to which plaintiff addressed himself.

With respect to claims 44, 45, 55, 59 and 67 plaintiff's position is clearly stated in "Brief" for plaintiff on pages 38 to 46 and in "Reply Brief" for plaintiff on pages 33 to 37 in so far as anticipation by publication "Diamond and Gem Stone Industrial Production" by Paul Grodzinski, N.A.G. Press Ltd., London 1942 is concerned. The above publication disclosed no facilities or process for determining the oscillatory vibration of a work-piece as called for in plaintiff's claims, nor did the publication suggest plaintiff's invention to the man skilled in the art. The above publication did not suggest any means for measuring "sound" or "oscillatory vibrations", plaintiff measures vibrations prior to conversion to sound or independently thereof.

The Courts statement in the Opinion that "a statement that a device is operated automatically rather than manually is not a statement of invention," must be based on the premise that there was a device disclosed in the prior art for measuring vibrations of a diamond subject to an abrasive or cutting operation. None of the patents or publications disclose or suggest a method or apparatus for accomplishing this.

Whether or not a "means" or "specific terms" in a claim are coordinate to other means or terms must be determined and construed in accordance with the specification in the light of the inventor's use thereof and not by an Examiner's playing hop scotch with semantics. If plaintiff's 'vibration' as disclosed in the specification is 'oscillatory vibration' the Examiner errs in holding "sound" and "vibration" coordinate terms.

The Court's Opinion that "This is a most difficult case which involves intricate and technical questions." Is evidently based on the fact that the Examiner's strained construction of words and phrases and confusion in semantics, relative to plaintiff's claims has misled the Court with regard to plaintiff's claims as well as the prior art, however the Examiner may possibly be confused with regard to the advance plaintiff made over said prior art, therefore the Court upon a close inspection of plaintiff's "Brief" and "Reply Brief" may properly distinguish between Examiner's allegations and the factual facit of plaintiff's position respecting said claims and the relationship of the prior art thereto as well as plaintiff's compliance with 35 U. S. C. 112.

The Court's Opinion that "The Patent Office has the equipment for deciding intricate and technical questions" seems to rest on the following cases cited by the Court: Robertson v. Cooper, 4 Cir., 46 F. 2d. 766, 768; Esso Standard Oil Company v. Sun Oil Company, 97 U. S. App. D. C. 154, 157; Morgan v. Daniels, 1894, 153 U. S. 120, 125, 14 S. Ct. 772, 38 L. Ed. 657, and cases cited by said cases, however plaintiff's case is not concerned with "trade-marks", "design" or "priority", therefore it appears to plaintiff that these cases are not controlling in instant case before this Court.

With regard to the Court's Opinion that "There is a presumption that the Patent Office is right and I find in this case that the evidence submitted by the plaintiff has not overcome the presumption 'by clear proof of mistake,'" the plaintiff notes the following findings of fact established by the Patent Office.

The Patent Office Board of Appeals held Plimmer and Bailey patents are not directed to the problem with which appellant is concerned, of course in instant case, it is the Plaintiff.

Defendant's Exhibit No. 1 Item H page 4 lines 23-26;

"We find it unnecessary to discuss appellant's arguments in detail since it may readily be conceded that the Bailey and Plimmer patents are not directed to the problem with which appellant is concerned."

-2-

The Patent Office Board of Appeals held plaintiff's arguments with respect to compliance with 35 U. S. C. 112 and distinctions of Claim 7 over the Coleman device to be true.

Defendant's Exhibit No. 1 Item H page 5 lines 18-19:

"We think appellant's argument is sound in so far as claim 7 is concerned."

-3-

The Patent Office Board of Appeals held the latter part of Claim 51 did properly define the control force of claim 51.

Defendant's Exhibit No. 2 Item H (paper no. 18) lines 5-10:

"means responsive to the vibrations of the diamond for controlling the position of the cutting disc on its planetary axis since it is the vibration of the diamond which produces the control force. It is not readily apparent how else the control could be defined than by reference to the vibrations of the diamond."

-4-

At the trial Mr. Miller conceded for the Patent Office that the Plaintiff has invention.

"Official Transcript" page 6 lines 14--

"The Court: The Patent Office concedes that the plaintiff has invention?

Mr. Miller: That is right."

On the Brief for the Defendant, Mr. Arthur H. Behrans, of Counsel, after a full analysis of the prior art separately and in combination and in view of each other, conceded for the Patent Office that such a procedure is by trial and error, when referring to Grodzinski's disclosure in publication cited by the Patent Office. Patent Office held prior art cited to disclose nothing but "Trial and Error".

"Brief For The Defendant" page 21 lines 3-5:

"a cutter observes when a stone 'runs', or cuts with the grain, from its special sound. Such a procedure is 'by trial and error'."

The Patent Office held that Coleman's device of Figure 1, therefore, does not meet the functional requirement of claim 7.

"Brief For the Defendant" page 12 lines 8-10:

"Coleman's device of Figure 1, therefore, does not meet the functional requirement of claim 7."

The Patent Office Board of Appeals held claims distinguished from Grodzinski's publication by instrumentation in preference to ear.

"Defendant's Exhibit'No. 1 Item H (paper No. 18 page 10 lines 21-24:

"These claims distinguish from the method taught in the publication either by reciting that the vibration is detected automatically or by instrumentation rather than by ear."

Since it is obvious that the prior art is one of "Trial and Error" or "Not directed to the problem with which plaintiff is concerned," or "Require modifications of a high inventive level" or "Require specific mechanism in Process claims" Plaintiff believes the following cases controlling in instant case before this Court:

"Williams Iron Works v. Hughes Tool Co."
109 F. 2d. 500

"8. A prior patent does not 'anticipate' where changes or modifications, involving the exercise of more than mere mechanical skill, are required to render it capable of performing the functions of later patent."

"9. A prior patent to 'anticipate' a patent for a combination, must disclose all the elements of such combination or their mechanical equivalents, functioning in substantially the same way to produce substantially the same result."

"13. prior patent which fails to solve the problem toward which the inventors efforts are directed does not 'anticipate' a subsequent patent which successfully solves the problem and effectively accomplishes the desired result."

"14. The fact that others skilled in an art and working in a given field many times endeavored, but failed to discover principle and mode of operation of a new and useful improvement, is strongly indicative that he, who thereafter discovers the principle of such improvement, and designs a complete and operative device embodying such principle, did more than would be obvious to a mechanic skilled in the art, and that his conception resulted from the exercise of inventive genius."

Since the Board of Appeals held some claims distinguish over the Grodzinski's Publication by apparatus limitations Plaintiff believes the following cases are pertinent:

"Previous claims with apparatus limitations was sustained by the Supreme Court in (Hoyt v. Horne 145 US 302) pat no. 303 Aug 12, 1884 to John Hoyt.

"Claim 1. The improvement in beating rags to pulp in a rag engine having a beater roll and bed-plate knives, consisting in circulating the fibrous material and liquid in vertical planes, drawing the same between the knives at the bottom of the vat, carrying it around and over the roll and delivering it into the upper section of the vat, substantially as described."

It was held in (Ex parte Nelson and Cosby, 82 U.S.P.Q. 115)

"mere reference to certain instrumentalities in process claims in describing performance of certain steps does not render claim improper, but limits them and makes them more definite."

It was held in (Miller, 44 U. S. P. Q. 542)

"Claims setting forth a series of steps which might be accomplished by various mechanisms either automatically or partially hand operated are proper statutory method claims and not the function only of the specific device shown."

CONCLUSION

It is submitted that there is nothing in the prior art to preclude plaintiff from being granted the claims before this Court.

There is nothing in the statute to bar the allowance of claims before this Court in instant case.

If the Court must lean on the Patent Office in reference to its finding of fact, it may then weigh all the findings of fact to properly evaluate plaintiff's case against the Commissioner of Patents.

Plaintiff requests a ruling that all claims before this Court distinguish and define over the prior art in this case.

Plaintiff requests a ruling that all claims before this Court meet the statutory requirements of title 35 U. S. C.

In the alternative to finding for the Plaintiff, and rendering a judgment for Plaintiff, Plaintiff requests a New Trial.

Dated: December 13, 1957 /s/ Lewis A. Siegel, Pro. Per.
2877 Grand Concourse
New York 68, N. Y.
Sedgwick 3-2354

Receipt of a copy of the POINTS AND AUTHORITIES IN SUPPORT OF MOTION and MOTION OF PLAINTIFF FOR A JUDGMENT NOTWITHSTANDING THE VERDICT FOR DEFENDANT OR IN THE ALTERNATIVE A NEW TRIAL, dated December 13, 1957, acknowledged this 13th day of December, 1957.

/s/ C. W. Moore
Solicitor, U. S. Patent Office
Attorney for Defendant

[Filed Jan. 16, 1958]

Order Overruling Motion For Judgment Non Obstante Veredicto or in Alternative a New Trial.

Upon the coming on for hearing of the motion filed herein by Lewis A. Siegel, Plaintiff, for a new trial or for judgment n.o.v., it is this 16th day of January, 1958, ordered that said motion be, and the same is hereby overruled.

By direction of
Edward M. Curran
Judge

Harry M. Hull, Clerk
By /s/ Charles _____
Deputy Clerk

[Filed Jan. 21, 1958] ORDER

Upon consideration of plaintiff's motion for judgment notwithstanding the verdict for defendant or in the alternative a new trial; and upon consideration of the points and authorities filed by the plaintiff, it is this 20th day of January, 1958

ORDERED that plaintiff's motion be and is hereby denied as to both alternatives.

/s/ Edward M. Curran
Judge

[Certificate of service]

[Filed April 14, 1958]

NOTICE OF APPEAL

Notice is hereby given this 14th day of April, 1958 that Lewis A. Siegel, the plaintiff herein, hereby appeals to the United States Court of Appeals for the District of Columbia from the judgment of this Court entered on the 4th day of December, 1957, in favor of Robert C. Watson, Defendant, against said Lewis A. Siegel, Plaintiff.

/s/ Lewis A. Siegel, Pro Se
2877 Grand Concourse
New York 68, N. Y.

* * *

[Filed April 14, 1958]

ORDER FOR TRANSMISSION OF ORIGINAL PAPERS,
EXHIBITS, & TRANSCRIPT

To the Honorable the Judges of the District Court of the United States for the District of Columbia:

Lewis A. Siegel, the Plaintiff herein requests the Honorable Judge Edward M. Curran order sent to the Court of Appeals for the District of Columbia, all original papers, exhibits, and transcript in

lieu of copies, as provided under Rule 75 of Federal Rules of Civil Procedure.

New York 68, N. Y.

Respectfully submitted,

April 10, 1958

/s/ Lewis A. Siegel

Received this 14th day of April, 1958.

IT IS SO ORDERED

/s/ Edward M. Curran
Judge, U. S. District Court for the
District of Columbia

No fee required.

/s/ E.M.C.

EXCERPTS OF PLAINTIFF'S EX. 1

PATENT APPLICATION

This invention relates to a method and device for cutting, grinding, lapping or polishing (hereinafter referred to as cutting) diamonds or other substances having a grain structure (cutting grain), of the type in which the work is held in a dop mounting and means are provided for automatically adjusting the dop to the cutting plane of a rotating disc or skaif (hereinafter referred to as a cutting disc) in such manner that the "cutting grain" of the diamond is in the proper position relative to the cutting disc or for automatically positioning the cutting disc so that the abrasive runs in the proper direction relative to the cutting grain of the diamond and means for indicating the cutting grain of a diamond and means for automatically disengaging diamond from diamond cutting disc and a simplified and easy to construct planetary diamond cutting machine provided with automatic controls.

The structure of a diamond is such that it is capable of being cut only when the abrasive grains pass in a certain directional sense relative to the grain or crystalline structure. This directional sense is known as the "polishing" or "cutting grain" of the diamond. This requires a precise grain presentation to the cutting disc.

Prior to my method and means of diamond cutting there was no indicator to show a diamond was presented to a cutting disc on the

"cutting grain", sometimes weeks were lost locating the cutting grain of a particular surface of the diamond, and after finding the cutting grain, after some of the diamond was cut away a new cutting grain presented itself and the cutting disc would not cut the diamond until the new cutting grain was found. After presenting the diamond to the cutting disc, the diamond was checked each time to see if it was cutting. The above time losses are experienced by skilled diamond cutters many years in their field. With my method and device the cutting grain is found fully automatic and left in that position, if the cutting grain changes the machine immediately begins to adjust to the new cutting grain position of the diamond, thus doing automatically in minutes what sometimes took weeks by skilled workers. If manual operation of my method is used it is not necessary to move the diamond from the cutting disc to see if it is cutting as the indicator will show when it is cutting, and if later the grain changes my method and means immediately disengage the diamond from the cutting disc.

The objects of my process and devices are,

A method of cutting diamonds or materials having a grain structure.

A method of indicating when a diamond is in proper cutting grain position relative to the diamond cutting wheel.

A method of automatically presenting the cutting grain of a diamond to a diamond cutting wheel.

To automatically separate the diamond from the diamond cutting disc when the cutting grain of the diamond is no longer presented to the cutting disc.

An automatic cutting grain indicator.

An automatic synchronizer for keeping the cutting grain of a diamond in the proper position relative to the diamond cutting disc.

An automatic synchronizer for keeping the diamond cutting disc in the proper position relative to the cutting grain of the diamond.

An automatic planetary diamond cutting disc.

A method utilizing degree of vibrations to actuate automatic machinery.

A vibration sensitive dop holder.

A dop holder capable of adjusting automatically a diamond to its cutting grain position relative to the cutting disc.

A further aim of the invention is to provide a method and means adapted automatically to find the cutting grain of a diamond without the skilled inspection and setting of the diamond usually required for the purpose of finding the grinding position.

In the accompanying drawings-

Figure 1 is top plan view of dop holder according to one form of the invention.

Figure 2 is side view of dop holder applying diamond in dop to cutting disc with piston on table beneath dop holder.

Figure 3 are piston elements.

Figure 4 sectional view on line 1-1 figure 1.

Figure 5 dop holder supported off cutting disc by piston.

Figure 6 is a side elevation of a machine according to one form of the invention, illustrating the combination thereof with a rotary planetary cutting disc.

My process utilizes variations in vibrations caused by a diamond being cut to indicate the cutting grain position of a diamond being cut, and also to actuate automatic devices by a change in degree of vibrations while diamond is being cut by connecting a vibration indicator to diamond holding means in a suitable manner, the purpose of which is to open or close an electric circuit to automatic devices according to the degree of vibration of dop holding means, the electric circuit may be to a device for disengaging the diamond from the diamond cutting wheel or it may be to a device for rotating the diamond against the abrasive cutting disc to a point where sufficient vibration indicated on the vibration indicator opens the electric circuit to diamond rotating means, thus leaving diamond in cutting grain position relative to cutting disc or the electric circuit may be to a device for controlling the position of the cutting disc about a planetary orbit and control the position of the disc on its orbit much the same way as it controls rotation of diamond or diamond holding tool, such as a dop in a dop holder.

My method provides for quick manual synchronization or automatic synchronization, i.e., presentation of the two elements (the

diamond and the cutting disc) to each other in such manner that the abrasive grains of the cutting disc pass in the proper directional sense relative to the cutting grain of the diamond.

In carrying the invention into effect according to one mode adapted to utilize my method is to provide a dop holder with a rotatable adjustable dop adapted 8 which is provided with a shoulder 40 and a bore 13 and screw 12 for securing stem 14 of dop 15 in locked position in bore 13 adaptor 8 protrudes through bore 39 of dop holder 1 enough to secure gear 7 on said adaptor, worm 6 on shaft 5 drives gear 7 when motor 4 is energized. A vibration indicator comprising microphone 2 battery 10 ammeter 3 ammeter control rheostat 34. Ammeter 3 is provided with a dial 3A upon which a needle forming a point of contact 35 turns, said needle being electrically insulated from ammeter. At O on the dial is provided a second point of contact 36 also electrically insulated from ammeter. The needle is controlled by amount of electric flowing from battery 10 through microphone 2 and rheostat 34 on wire connector 29 and 30 to ammeter 3. Said amount of electric varying with degree of vibration of dop holder due to microphone in circuit. The points of contact 35 and 36 are connected electrically with motor 4 through double pole double through switch 9. My process comprises positioning diamond in dop and bearing said dop against rotating cutting disc, closing electric circuit to dop motor and letting motor run until diamond is located with its cutting grain in the proper position relative to cutting disc, thus causing a greater vibration to dop holder and permitting vibration indicator to function thus opening circuit to motor causing motor to stop and leaving diamond at cutting grain position against rotating cutting disc.

The points of contact 35 and 36 may be connected electrically to piston 11 instead of motor 4 by same double pole double throw switch 9 if disengaging diamond from cutting disc is preferred to automatically repositioning diamond to new cutting grain position when grain changes. Piston 11 comprising 11A bracket, 11B cutter tube, 11C spring, 11D inner tube, 11E electric door-check, 11F cutter tube stop, 11G cutter tube flange, 11H base. The said piston is released at the time the grain

changes by a door-check which is energized by an electric current which issues through the needle of a dial indicator which controls the apparatus during the cutting operation, door-check holds piston down by catching flange 11G, piston can only go as high after release by door-check as cutter tube stop 11F permits, as said stop catches flange 11G when rising, preventing same from going higher, thus piston 11 lifts front end of dop holder a predetermined distance off cutting disc. Spring 11C exerts constant pressure against bracket 11A secured to cutter tube 11B. Figure 5 shows position of piston and dop holder after door-check was energized and released piston.

Electric plug 39 can be connected to any source of electricity, for supplying electric power for the motors or piston 11.

Another mode of utilizing my method is to employ a cutting disc wherein the cutting disc in addition to being rotated about its own axis is adjustably revolvable in an orbital or planetary path. My method and device in conjunction with mechanism for giving the cutting disc a planetary adjustment in relation to the dop such that when cutting a diamond the cutting grain thereof is automatically found.

Describing first the cutting disc mounting arrangement, the cutting disc 16 the cutting plane of which is located vertically is mounted on a shaft 20A and is rotatable about its own axis B-B. The shaft 20A is armature shaft of motor 20 which is secured to bracket 21 which is secured to shaft 22 which is mounted in frame 18 so that shaft 22 and bracket 21 are capable of being rotated in the frame 18 about the planetary axis A-A. Locked on shaft 22 are collars 23, 23A, 23B, which bear against frame 18 thus preventing vertical play of shaft 22. A gear 24 is fixed on bottom of shaft 22 and adapted to be engaged by a driving gear 25 mounted on shaft of motor 26 for rotating the shaft 22 and giving the cutting disc its planetary motion about the bracket 21 and planetary axis A-A. The diameter of the cutting disc 16 should be at least two times that of the distance between planetary axis A-A and cutting disc axis B-B so that the diamond may be continuously traversed upon the disc face without interruption when planetary motion is utilized to

position cutting disc in proper location relative to cutting grain of diamond being cut.

When utilizing planetary cutting disc arrangement any type of dop holder will be good if vibration indicator is attached to said dop holder, in the present arrangement it would only be necessary to attach the microphone of said indicator to dop holder as illustrated in Fig. 6.

To utilize an automatic planetary cutting disc grain finder, a vibration indicator is attached to dop holder for closing an electric circuit at contacts 35 and 36 to an electric motor 26 for revolving cutting disc 16 on its planetary axis A-A to desired cutting grain position which is indicated by vibration indicator which also opens electric circuit to motor 26 thus stopping motor and leaving cutting disc in desired planetary position relative to direction of cutting grain of diamond being cut.

Where diamond disengaging means is preferred if grain changes double pole double throw switch 9 can be used to disconnect automatic grain finder and connect automatic through-off device piston 11.

My method and device utilize the change in degree of vibration between a diamond with the cutting grain properly presented to the flow of abrasive and the same diamond when the cutting grain is not properly presented to the flow of abrasives of a cutting disc. It is a process providing mechanical and electrical facilities in place of human skill and ability.

In accordance with the patent statutes I have described and illustrated the preferred embodiments of my invention, but it will be understood that various changes and modifications can be made therein without departing from the spirit of the invention as defined by the appended claims.

I claim:

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8. A method of cutting diamonds which comprises attaching a vibration sensitive meter to diamond holding means for indicating degree of vibration of said diamond holding means while diamond is being cut.

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16. In combination a diamond holding means for holding diamond against abrasive disc, a vibration indicating means connected to said diamond holding means to indicate degree of vibration of said diamond holding means.

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3295--APPLICATION FOR UNITED STATES PATENT

* * *

SOLE

OATH, POWER OF ATTORNEY, AND PETITION

Being duly sworn, I, Lewis A. Siegel, depose and say that I am a citizen of the United States of America residing at New York, County of Bronx and State of New York; that I have read the foregoing specification and claims and I verily believe I am the original, first, and sole inventor of the invention or discovery in Vibration Variation Control described and claimed therein; that I do not know and do not believe that this invention was ever known or used before my invention or discovery thereof, or patented or described in any printed publication in any country before my invention or discovery thereof, or more than one year prior to this application, or in public use or on sale in the United States for more than one year prior to this application; that this invention or discovery has not been patented in any country foreign to the United States on an application filed by me or my legal representatives or assigns more than twelve months before this application; and that no application for patent on this invention or discovery has been filed by me or my representatives or assigns in any country foreign to the United States, except as follows: None.

And I hereby appoint Self, Registration No., my attorney or agent with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent Office connected therewith.

Wherefore I pray that Letters Patent be granted to me for the invention or discovery described and claimed in the foregoing specification and claims, and I hereby subscribe my name to the foregoing specifica-

tions and claims, oath, power of attorney, and this petition, this 31st day of March, 1950.

Inventor	<u>Lewis</u>	<u>A.</u>	<u>Siegel</u>
	First name	Middle initial	Last name

Post Office Address (2877 Grand Concourse
(New York, 58, N. Y.

State of New York)
County of Bronx)SS

Before me personally appeared Lewis A. Siegel to me known to be the person described in the above application for patent, who signed the foregoing instrument in my presence, and made oath before me to the allegations set forth therein as being under oath, on the day and year aforesaid.

[SEAL]

/s/ Harry M. Blucher
Notary Public, State of New York
No. 03-5353900
Qual. in Bronx Co. Cert. Filed with
Bronx Co. Reg.

Term Expires March 30, 1952

This form may be executed only when attached to a complete application as the last page thereof.

* * *

49 EXCERPTS OF PLAINTIFF'S EXHIBIT 1 (Paper No. 5A)

[U. S. Patent Office,
2-14-51 - Division 58
Page 5 Amendment 4]

In response to the Official Action of August 16, 1950 please amend the above-identified application as follows:

* * * * *

50 Claim 8, line 1, delete the comma (,); line 2, after "to" insert __ a __; line 3, after "indicating" insert __ the __; line 4, after "while" insert __ a __, after "cut" change the period (.) into a comma (,) and add: __ and controlling the direction of cutting in accordance with the degree of vibrations indicated. __

* * * * *

51 Claim 16, line 1, after "combination" insert __ an abrasive disc, __; line 2, after "holding" insert __ a __, after "against" insert __ said __ and after "disc," insert __ and __; line 4, after "indicate" insert __ the __.

* * * * *

IN THE UNITED STATES PATENT OFFICE

97 Before the Board of Appeals

Ex parte Lewis A. Siegel

Application for Patent filed April 1, 1950. Serial No. 153430

Appeal No. 36619

BRIEF ON APPEAL

This is an appeal from the final rejection of the Examiner of Division 58, dated August 12, 1952. The claims on appeal are, 1, 7, 21, 43, 44, 45, 46, 49, 50, 51, 53, 55, 56, 58, 59, 67 and 68.

1. In combination a vibration indicator connected to a diamond holding means.

7. A vibration controlled dop holder having automatically acting dop rotating means adapted to rotate the dop to the cutting grain position of the diamond in said dop relative to said cutting disc.

21. A diamond cutting and polishing machine comprising a diamond cutting disc on which the diamond bears, a dop holder for holding a dop which bears a diamond against said diamond cutting disc, a vibration indicating means adapted to close an electric circuit to an electric motor which when energized rotates the dop held in said dop holder, to a position where cutting grain of diamond is presented to cutting disc causing increased vibration of dop holder which actuates vibration indicator which opens electric to motor causing motor to stop rotation of dop and leaving diamond on cutting grain position against cutting disc.

98 43. In an apparatus for grinding or polishing gems, in combination, a dop holder, a dop rotateably mounted in said dop holder, vibration sensitive means adjacent said dop holder, and switch means controlled by said vibration responsive means for energizing said motor in response to said dop holder carrying out vibrations other than vibrations of a predetermined character.

44. A method of cutting a diamond which comprised applying said diamond against a cutting disc, ascertaining by instrumentation degree of vibration of the diamond due to the action of said cutting disc, and positioning the diamond relative to the disc in accordance with said degree of vibration.

45. Ascertaining by instrumentation degree of vibration of a diamond being cut.

46. As a new article of manufacture, a vibration indicating tong for diamond cutting.

49. In combination, a dop, a vibration indicator, so constructed and arranged to indicate degree of vibration of said dop.

50. A tong comprising dop holding means, vibration indicating means for indicating vibrations of said tong.

51. In a diamond cutting machine, a diamond cutting disc rotateably about its own axis and revoluable in an orbit about a planetary axis for automatically finding the cutting grain of a diamond, means for rotating the cutting disc, and means responsive to the vibration of said diamond for controlling the position of the cutting disc on its planetary axis.

99 53. In combination, a cutting tool, vibration responsive means responsive to vibrations of work piece subject to said cutting tool for controlling said cutting tool with respect to said work piece.

55. The method of aligning a work piece having a grain structure with a grinding tool therefore which comprises measuring by instrumentation vibrations executed by said work piece in response to excitation by the grinding tool and orienting said work piece with respect to said grinding tool in accordance with the character of said vibrations.

56. The process of removing a workpiece having a grain structure from a grinding tool thereof which comprises measuring by instrumentation vibrations executed by said work piece in response to excitation by the grinding tool, and removing said work piece when said vibrations diminish.

58. Remote observation, remote control of diamond cutting.

59. Frictionally exciting diamond by placing a portion thereof in contact with a rotating surface, measuring by instrumentation vibrations executed by said diamond on being thus excited, rotating said diamond with respect to said surface, and ascertaining the position of said diamond in which said vibrations are a maximum.

67. In the art of cutting diamonds by the abrasive method, where a diamond is urged against an abrasive tool, the method of continuously determining the degree of vibration as an indication of the penetration of said abrasive tool to said diamond, which includes the steps of, allowing the diamond to vibrate, and indicating by instrumentation to the operator the degree of such vibrations.

100 68. A process utilizing variation of vibration caused by diamond against abrasive means to actuate automatic controlling devices.

The Present Invention

The present invention is in the field of diamond cutting. It involves a method and appliances for carrying out such method. The invention is believed to be a most unusual one in that it is based on vibrations of a work piece having a grain structure permitting cutting of said work piece in a specific direction. The rationale has been clearly

explained in the specification and represents an important advance in diamond cutting methods and devices. Rather than the isolated devices of the references, the present invention can locate that which remains concealed from the conjoint use of the tactile, auditory and visual senses, namely, the cutting grain of a diamond. Applicants method and device are, however, much different from the devices of the references which are an assortment of depth gauges capable of indicating a predetermined dimension and in some devices controlling cutting operation when the critical dimension is reached.

The major purpose of the invention is to facilitate learning the cutting grain direction of a diamond on any section thereof and to control cutting of diamond by electro-mechanical means in preference to tactile, auditory and visual senses. The invention, therefore, is a highly developed and scientifically conceived and executed method and appliance and is in no real sense "Merely substituting some unspecified form of instrumentation for the ear of the operator", as Examiner suggests.

* * * * *

83 [Mailed August 12, 1952]

DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE
WASHINGTON

[Paper No. 8]

Lewis A. Siegel
2877 Grand Concourse
New York 58, New York

Applicant: L. A. Siegel
Ser. No. 153,430
Filed April 1, 1950
For Vibration Variation Control

Responsive to amendment filed April 4, 1952.

The new sheet of drawing has been approved and entered.

Claim 1 is again rejected as being unpatentable over the patent to Bailey or the patent to Plimmer. The reference to a diamond holder is not sufficient to structurally distinguish over the patent disclosure since the patent disclosures are obviously capable of holding a diamond in some manner. Both patents show the broad combination of a vibration indicator connected to a work holder.

Claim 7 is again rejected as being functional and indefinite and thus not complying with Sec. 4888 R. S. This claim is drawn to a single means and thus covers all possible means for accomplishing the result stated. Such a claim is drawn only to the result to be accomplished and not to a construction which is capable of accomplishing the result.

See Ex parte Gilman, 1925 C. D. 144; 341 O. G. 255 and In re Gardner, 1909 C. D. 306; 140 O. G. 258; 32 App. D. C. 249.

84 Claim 7 is further rejected as defining nothing patentable over the patent to Coleman. This patent discloses an automatically acting dop rotating means. This is considered to be all the structure defined by the claim. The reference to a vibration controlled dop is functional since the claim fails to recite any structure which will result in such control of a dop.

Claims 21 and 43 are again rejected as presenting nothing patentable over the patent to Coleman in view of the patent to Plimmer. Nothing patentable is seen in the broad expedient of providing the Coleman machine with a vibration pickup such as that shown by the Plimmer patent. The claims do not locate the pickup in any particular manner and they fail to positively relate the pickup to the other elements of the claims so that the combination will produce the stated result. Claim 21, for instance, sets forth that the pickup is adapted to close an electric circuit to cause a motor to operate to rotate the dop. Neither the circuit nor the motor or its connection to the dop is set forth as an element of the claim. Any switch is capable or adapted to perform any function which a circuit into which may be placed is adapted to perform. These claims positively recite only a cutting disc, a dop holder and a vibration indicating means. The balance of the claims is only functional recitation of a desired result.

85 Claim 44 is rejected as defining nothing patentable over the publication "Diamond and Gem Stone Industrial Production". The publication teaches it to be old to position a diamond relative to a tool by means of the characteristic sound emitted by the contact between the tool and the diamond. Merely substituting some unspecified form of

"instrumentation" for the ear of the operator would involve nothing patentable.

Claim 45 is rejected as failing to comply with Sec. 4888 R. S., because the claim is functional and indefinite. This claim sets forth only a result and not a procedure to be followed to accomplish the result. Results as such are not proper subject matter for patent protection under the statute.

Claim 45 is rejected as unpatentable over the publication for the reasons advanced in the rejection of claim 44.

Claim 46 is rejected as failing to comply with Sec. 4888 R. S., because the claim is functional and indefinite. The ground of rejection as applied to claim 7 applies with equal force to claim 46.

Claim 46 is further rejected as defining nothing patentable over the patent to Coleman in view of the patent to Plimmer for the reason that nothing patentable would be involved in associating a vibration indicator such as shown by Plimmer in some manner with a tong as shown by Coleman.

Claims 49 and 50 are rejected as presenting nothing patentable over the patent to Coleman in view of the patent to Plimmer for the reasons advanced above in the rejection of claim 46.

86 Claim 51 is rejected as failing to comply with the requirements of Sec. 4888 R. S., because the claim is functional and indefinite. This claim merely states a result in so far as the control of the position of the cutting disc is concerned. No structure is set forth which is capable of controlling the position of the disc. The means responsive to the vibrations for accomplishing the result is a functional recitation. See *In re Hall*, 614 O. G. 11; 168 F.2d 92; 77 USPQ 618.

Claim 51 is further rejected as defining nothing patentable over the patent to Jearum in view of the patent to Plimmer. Broadly, nothing patentable is seen in providing the Jearum device of Figure 4 with a vibration responsive means such as that shown by Plimmer.

Claim 53 is rejected as defining nothing patentable over the patent to Bailey or the patent to Plimmer. Either of the patents is

considered to disclose all the structure included in the claim.

Claim 55 is rejected as defining nothing patentable over the publication for the reasons advanced in the rejection of claim 44.

Claim 56 is rejected as unpatentable over the patent to Bailey. It appears that the device of Figs. 3 and 4 of the patent will function as required by this claim. The removing of the work piece and the stopping of the tool are regarded as equivalent steps since both produce the same result.

Claim 58 is rejected for failure to comply with Sec. 4888 R. S., for the reasons set forth in the rejection of claim 45.

87 Claim 58 is rejected as met in the patent to Coleman which is considered to disclose whatever the claim sets forth either as a method or an apparatus.

Claims 59, 67 and 68 are rejected as not defining patentably over the publication for the reasons set forth in the rejection of claim 44.

Claim 68 is rejected for failure to comply with Sec. 4888 R. S., for the reasons set forth in the rejection of claim 45.

Since it appears an issue has been reached, this action is made final.

Claims 1, 7, 21, 43, 44, 45, 46, 49, 50, 51, 53, 55, 56, 58, 59, 67 and 68 stand finally rejected.

Claims 2 to 6, inclusive, 8 to 14, inclusive, 16 to 20, inclusive, and 22 to 41, inclusive, stand cancelled.

Claims 15, 42, 47, 48, 52, 54, 57, 60, 61, 62, 63, 64, 65 and 66 stand allowed.

VW*s

/s/ E. F. Dowell
Examiner.

117 [Mailed May 13, 1953]

REPLY TO BRIEF

[Paper No. 14]

EXAMINER'S STATEMENT

This is an appeal from the final rejection of claims 1, 7, 21, 43,

44, 45, 46, 49, 50, 51, 53, 55, 56, 58, 59, 67 and 68. Claims 15, 42, 47, 48, 52, 54, 57, 60, 61 to 66, inclusive, stand allowed.

The references of record relied on are:

Coleman	1, 168, 858	Jan. 18, 1916
Plimmer	1, 891, 777	Dec. 20, 1932
Bailey	2, 340, 843	Feb. 1, 1944
Jearum	2, 386, 687	Oct. 9, 1945

Publication: "Diamond and Gem Stone Industrial Production"
by Paul Grodzinski, N. A. G. Press, Ltd.,
London, 1942, Page 90

The present invention relates to machines and methods of grinding or polishing gem stones particularly diamonds. In this application in Figs. 1 and 2 a disc 16 having its upper plane face charged with diamond dust in a conventional manner is rotated by power means not shown about a vertical axis. An arm 1 rockable by its depending foot
118 near its right end on table 17 in Fig. 2 carries a vertically disposed rotary adapter 8 near its left end. Secured in the adapter is a holder 15 to rotate therewith (called a dop) in the lower end of which is mounted in a conventional manner a gem diamond blank which is to be ground with the usual facets. A motor 4 mounted on arm 1 is adapted to rotate the dop through shaft 5 and worm gearing 6 and 7 under certain conditions. Now it is well known in the art that diamonds have certain directional properties as respects grind-ability due to its crystalline structure. A diamond may be ground under the above-named circumstances only "with the grain". The finding of the grain or the correct orientation of the particular surface of the diamond has been a time-consuming matter and one requiring considerable specialized skill. As is recognized in the art, when the diamond is being cut, a certain sound is given forth by the abrading action. Applicant utilizes sound-producing features to control the apparatus as will be explained hereafter. A microphone 2 of any conventional character is mounted on the arm 1 and is connected in a circuit including a rheostat 34, a current source such as battery 10 and an ammeter 3. The needle and zero point of the ammeter are points of contact in an electric circuit from power source 39 which source feeds to the motor 4 when the switch 9 is

appropriately set. The ammeter then is a relay in the main power circuit of the motor 4 when the switch 9 is appropriately set. The microphone circuit is so set that, when the diamond is being cut on the grain the characteristic sound given forth affects the microphone to allow enough current to flow in the relay circuit to cause the ammeter needle to separate from its zero point and to interrupt the power circuit of the motor, and the rotation of the dop ceases. If during the operation the cutting ceases due to a change of grain, the sound level lowers to such an extent that the microphone again introduces high resistance in the circuit to cause the needle to go back to its zero position where the motor circuit is reclosed and the rotation of the dop occurs until the correct grain in the diamond is again found.

The microphone relay may be alternatively introduced by opposite setting of the switch 9 into a power circuit of a solenoid latch 11E, Fig. 3. This latch may retain a cylinder 11B attached to the underside of arm 1 (Fig. 2) against the bias of lifting spring 11C when proper cutting conditions exist. When they do not, as explained above, the microphone allows the relay at 3 to close which energizes the solenoid of 11E to release the latch so that the spring raises the arm 1 and the diamond into inoperative position which is in effect a signal to the worker of such improper condition.

120 A further modification is illustrated in Fig. 4. Here a cutting disc 16, driven by motor 20 is mounted on a radial arm 21 carried by a shaft 22. Shaft 22 is driven by a motor 26, worm gearing 24, 25. An arm 1 like that described above holds a diamond in a dop 15 against the cutting disc 16. A microphone 2 is mounted on the arm and in a manner similar to that described above controls alternatively the rotation (i. e., its stopping and starting) or its lifting under the described cutting conditions. Here, however, the correct attack angle of the disc is obtained by planetating it around the axis of shaft 22. The diameter of the disc 16 should be at least two times that of the distance between the planetary axis A-A and disk axis B-B so that the diamond may be continuously traversed upon the disc face without interruption when planetary

motion is utilized to position the cutting disc in proper location relative to the cutting grain of the diamond. I. e., to say, the disc 16 is plane-tated by motor 26 and its gearing until the microphone responds to the sound indicating cutting on the grain which stops the motor 26 as long as this desired condition persists or if switch 9 is repositioned and an incorrect sound condition exists, the lifter mechanism is released to lift the diamond from the cutting disc.

The references relied upon will be briefly described.

- 121 The patent to Plimmer shows a device 69 for discontinuing the forward or grinding feed of a carriage 26 carrying a power driven grinding wheel 29 toward a rotatably mounted workpiece when the work has reached the desired diameter. This is obtained by gaging the position of the peripheral face on a horizontal center line with respect to a fixed point on the machine. The gage comprises as shown, e. g., in Fig. 6, and arm 69 pivotally mounted at 70 on a series of relatively adjustable brackets (not necessary to describe in detail here) which are fastened to the headstock or work driver. The lower end of the arm 69 carries a movably mounted member carrying a wear point of diamond which will contact the grinding wheel when it reaches the predetermined position. The wheel because of its rough surface will cause the member 101 to vibrate. See the Plimmer patent, page 3, lines 70 to 90. Such member is the armature of a generator 67. The armature as shown in Fig. 11 is the pivoted arm 103 oscillatable about pivot 104 for reciprocating the core 105 through coil 106. The signal from this generator is amplified by the circuits shown in Figs. 10 and 11 to disconnect the worm drive shown in Fig. 3 from the shaft 36 in Fig. 2 which causes the in or grinding feed of the wheel 29 toward the work and hence stops this feed when the wheel reaches the finished work size position. Incidentally after this a weight 52 carried by a band 51 wrapped about a pulley 50 on
- 122 shaft 36 reversely rotates shaft 36 to retract the wheel from the work. The vibration or pick-up device of Plimmer is not a sound-responsive device.

The patent to Coleman is concerned with means to enable finding of the cutting grain of a diamond. See page 1, lines 19 to 30. Later in lines 35 to 55 this patentee mentions various physical effects which may be recorded to indicate the correct grain orientation. See especially lines 50 to 55. While he mentions sound as one effect, the entire other detailed disclosure is concerned with the frictional resistance effects which are stated to be maximum when grinding with the grain takes place. See page 2, lines 30 to 41. A motor 3 rotates a preliminary lap or grinding tool 1. Surrounding the lap is an annular friction surface which is described as either a plain surface or one charged with diamond dust. The friction disc is carried by a hub surrounding shaft 2 and is yieldably connected to the shaft through a torsion spring 5. A contact arm 26 extending from the hub contacts a split graphite resistance ring 25. The shaft 7 driven by the worm gearing shown at the upper part of Fig. 1 carries the diamond at 16. The shaft 7 is mounted in a block 8 adjustable laterally on arm 9 to first position the diamond into contact with the lap 2 to grind a small test facet on the diamond. Then the block 8 is shifted to position the diamond in contact with the face of friction disc 4.

123 During the constant rotation of the shaft the friction between the diamond and friction disc will vary due to the grain characteristic described above. This will cause a variation in braking resistance to the rotation of disc 4 by motor 3 causing the connected arm 26 to move variably relative to the electrical resistance ring 25. As shown in Fig. 1, the ring and arm are in a powered circuit including a galvanometer instrument 35, the armature of which moves in response to changes in effective resistance in the circuit produced by the motion of contact arm over the resistance ring. A marker 43 on arm 42 is moved by the armature over a record disc secured to the upper end of the shaft 7. A record is thus produced by the variations in friction of the diamond on the friction disc 4 and the high points on the record will show the grain direction of the test facet. The entire unit supported by block 8 is transferred to a standard diamond polishing machine with the diamond correctly oriented with reference to its grain by the aid of the record.

The patent to Jearum in Fig. 4 shows a conventional diamond grinding disc 2 (called a skaif or sheif conventionally) journalled on a shaft extending upward from arm 22 which is supported by a shaft 23. Shaft 23 is journalled in a fixed bearing 24. A pulley 26 fastened to arm 32 | concentrically of shaft 23 is driven by a belt 26a from a power source (not shown). The pulley carries a motor 27 which drives through pul-
 124 ley 28 and belt 28a the disc. A holder (not shown) supports the diamond 15 at an angle to the disc.

The patent to Bailey shows a device for grinding piezo crystal materials to the desired thickness for producing a desired frequency characteristic therein. An electrically insulated support 8 is separately recessed to receive a plurality of separate piezo crystal blanks 5. A lap 2 charged with abrasive on its under face is rotated by motor 4 in contact with the top face of the crystals 5. An amplifier 10 is effectively coupled to the table 1 while the input terminal of amplifier 10 is coupled to lap 2 through grounds 11 and 7, housing 4 and shaft 3. In Fig. 1 a frequency meter is connected to the output of the amplifier 10. The intermittent mechanical forces exerted on the crystal blanks during the lapping operation cause the blanks to vibrate at their own natural frequency, thereby generating piezo electric currents of this frequency. The close contact between the blanks and machinery parts results in a transfer of a portion of the piezo electric energy to the contacting surfaces and thence to the amplifier which feeds amplified currents to the frequency meter whereby the output frequency is indicated by the properly calibrated milliammeter. When the desired frequency reading is obtained, the lapping operation is stopped by the operator. A modification in Fig. 3 shows a crystal blank having a frequency-responsive
 125 system wherein the piezo electric currents from the crystal blanks stop the operation of the lap driving motor 4 automatically when the blanks have been ground to the thickness corresponding to the desired frequency.

For the convenience of the Honorable Board, the detailed application of the references relied upon in the final rejection will be given

here so that no reference back need be made thereto.

Claim 1 was rejected as being unpatentable over the patents to Bailey or Plimmer. The recitation of a holder as diamond holder does not structurally distinguish over the holder 1 in Bailey, the reference to diamond being treated merely as a statement of intended use. The output from crystals 5 being produced by the intermittent mechanical action above described causes the crystal blanks to vibrate and the circuits fed by the output of such vibrations are certainly vibration indicators as broadly recited. As to Plimmer, while the term diamond (use) is ignorable as explained above, gage element 101 carries a diamond 102 and the generator pickup circuits energized by the motion of lever 103 (vibration) are vibration indicators.

Claims 7 and 46 were rejected as functional and indefinite. These claims are in effect drawn to a single means of the type condemned in Ex parte Gilman, 1925 C. D. 144; 341 O. G. 235 and In re Gardner, 1909
126 C. D. 306; 140 O. G. 258.

Claim 7 was further rejected as not patentably defining over Coleman. This patent shows a dop 14 carried on a shaft 7 rotated from motor 22 as explained above in the detailed explanation of the reference. The recitation of the holder as having automatically acting rotating means does not structurally and patentably define over such motor. The recitation in the last two lines is purely functional and not supported by structure definitive over the reference. The introductory statement of vibration controlled is another example of functional recitation not adding a structural distinction.

Claims 21, 43, 46, 49 and 50 were rejected as presenting nothing patentable over the patent to Coleman in view of the patent to Plimmer. No invention is seen in the broad expedient of providing the Coleman machine with a vibration pickup device such as shown by Plimmer. Note the statement in Coleman, page 1, lines 40 to 60, especially line 52, "by differences of sound". In claim 21, e. g., all that is positively called for is a disc in line 2, the recitation of diamond cutting being purely functional, this having been masked by the relevance

of the Coleman and other patents of record, a holder in line 3, the recitation of its purpose not being structure, indicating means, the recitation of the characteristic, vibration, being functional, the recitation of adapted, etc., in line 5 to end of the claim being merely a narration of intended or desired action and not a recitation of structure that will necessarily produce the results. The apparently positive narration in lines 6 to end does not avoid the objection of functionality. Claim 43 calls for a dop holder intending to read on applicant's arm 1 and a holder readable on all or selected parts of the driven parts 7-15. Coleman shows similar parts corresponding even to name. The recitation of switch means does not define over Plimmer, Fig. 11, in the tube circuits, which are controlled by reciprocation (vibration) of armature 105. Whether the switch means is for certain purposes as recited in the last three lines of claim 43 is immaterial as this is only a functional recitation, especially as it is related to operation of said motor which has no verbal antecedent basis in the claim. Claim 46 is broader than the other claims. All that is positively claimed is a tong, presumably the dop holder 1 in the instant case. The term vibration indicating is functional so that in another aspect this claim does not define structurally over either Coleman or Plimmer. As to Plimmer, the recitation of purpose, diamond cutting is merely functional and not definitive over the vibrating gage bar 101 shown as 103 in Fig. 11. Also the diamond gage point will eventually wear as a result of its contact with the grinding wheel and this is a form of cutting. As to claims 49 and 50, the remarks as to Plimmer just above apply here too. The term dop does not structurally define over any holder such as that shown by bar 101 or 103.

Claims 44, 45, 55, 59, 67 and 68 were rejected as not patentably defining over the publication, above cited. The publication shows the old idea of positioning a diamond relative to the tool by means of the characteristic sound emitted by the contact between the tool and the diamond. Merely to substitute some unspecified form of "instrumentation" for the ear of the operator would not involve invention. The term degree

of vibration may be treated as a broad feature covering even merely differentiating sounds. Suppose, e.g., the operator were hard of hearing so that he would have to wear a conventional hearing aid which would be one form of instrumentation without inventive concept. Claim 55 is broader than claim 44 in omitting the specific material being out. The orientation is so broadly stated as to fail to define over the reference.

Claim 51 was rejected as functional and indefinite since it merely states a result in so far as the control of the position of the cutting disc is concerned. No structure is set forth which is capable of controlling the position of the disc. The means responsive to the vibration of said diamond, which is not a not a positive and proper part of the claimed machine, for the accomplishing of certain results, is merely functional.

129 Claim 51 was further rejected as not patentably defining over Jearum in view of Plimmer. Jearum shows in Fig. 4 a planetating disc 2 and means for rotating it. While the recitation of purpose in line 4 is merely functional and disregardable, the constant relative motion of the disc with respect to diamond 15 will find the grain (but not hold this position constantly) as broadly recited and as described in Jearum, page 1, column 2, line 18. Merely to add a vibration-responsive means as broadly recited and as shown by Plimmer to the Jearum device is not deemed inventive. The recitation of the purpose of the means in lines 6 and 7 is functional and not supported by connective structure that will necessarily produce the results stated.

Claim 53 was rejected as not patentably defining over Bailey or Plimmer. Bailey shows in Fig. 3 a cutting tool and means 19, 20 and motor trip switch at means 21-25 for stopping motor 4 which is certainly a means responsive to vibration of the work for controlling the tool as broadly recited. Plimmer, e.g., shows a tool grinding wheel 29 and vibration responsive means, Fig. 11, for controlling (stopping) the in-feed of the wheel. The functional recitation that the vibration means is responsive to vibrations of the work which is not a positive and proper part of the claimed machine is merely functional and adds no struc-

130 tural and patentable distinction over the reference. Moreover,

since the gage point, even though it be a diamond 102, will eventually wear and hence may be called work, the vibrations of which, as described before, control the grinding wheel feed system so that from this other viewpoint, the claim does not define over Plimmer.

Claim 56 was rejected as not patentable over Bailey. Certainly the step of measuring vibrations as recited is shown as broadly recited since the piezo current output is a function of the vibration of the blanks 5. The step of removing the work reads on that which would normally be done even though normally the lapping operation is terminated when the vibrations reach a certain desired maximum. Obviously, if for some reason of defect in the work, the vibration diminished, the meter 14 would show the diminished vibration so that the operator would naturally remove the defective blank.

Claims 58 and 68 were also rejected as failing to comply with Sec. 4888 R. S. as being merely for a result.

Claim 58 was further rejected as met in the patent to Coleman as disclosing whatever the claim defines either as a method of apparatus. Obviously, the steps or machine shown by Coleman in that the record produced of the grain orientation in the preliminary machine shown in detail in Coleman affords a remote control for the placement of the dia-
131 mond-carrying unit in the final finishing machine.

The final rejection of the claims is deemed sound and adhered to.

JDB*S

/s/ E. F. Dowell
Examiner.

137 [Mailed April 30, 1954]

U. S. PATENT OFFICE
BOARD OF APPEALS

Appeal No. 366-19

Hearing: March 2, 1954

IN THE UNITED STATES PATENT OFFICE

BEFORE THE BOARD OF APPEALS

Ex parte Lewis A. Siegel

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Application for Patent filed April 1, 1950, Serial No. 153,430.

Vibration Variation Control.

Mr. Lewis A. Siegel pro se.

This is an appeal from the final rejection of claims 1, 7, 21, 43 to 46, inclusive, 49, 50, 51, 53, 55, 56, 58, 59, 67 and 68. Fourteen claims have been allowed by the Examiner.

Claims 21, 45, 51 and 68 are representative and read as follows:-

21. A diamond cutting and polishing machine comprising a diamond cutting disc on which the diamond bears, a dop holder for holding a dop which bears a diamond against said diamond cutting disc, a vibration indicating means adapted to close an electric circuit to an electric meter which when energised rotates the dop held in said dop holder, to a position where cutting grain of diamond is presented to cutting disc causing increased vibration of dop holder which actuates vibration indicator which opens electric circuit to meter causing meter to stop rotation of dop and leaving diamond on cutting grain position against cutting disc.

138 45. Ascertaining by instrumentation degree of vibration of a diamond being cut.

51. In a diamond cutting machine, a diamond cutting disc rotatable about its own axis and revolvable in an orbit about a planetary axis for automatically finding the cutting grain of a diamond, means for rotating the cutting disc, and means responsive to the vibrations of said diamond for controlling the position of the cutting disc on its planetary axis.

68. A process utilizing variation of vibration caused by diamond against abrasive means to actuate automatic controlling devices.

The references relied upon are:

Coleman,	1, 168, 858,	Jan. 18, 1916,
Plimmer,	1, 891, 777,	Dec. 20, 1932,
Bailey,	2, 340, 843,	Feb. 1, 1944,
Jearum,	2, 386, 687,	Oct. 9, 1945,

Publication: "Diamond and Gem Stone Industrial Production" by Paul Grodzinski, N. A. G. Press, Ltd., London, 1942, page 90.

The appealed claims relate to a method and apparatus for grinding or polishing diamonds. Diamonds are crystalline substances having a grain structure. It is known in the art that grinding can be accomplished most effectively if it is performed along the grain of the diamond. It is also known that when grinding is in the direction of the grain a different character of vibration and sound is produced than when the grinding is in some other direction. Appellant has utilized this difference in vibration characteristics to orient a diamond being ground with respect to the direction of movement of the cutting disc at the point of contact therewith so that the diamond will be ground along its grain. The construction and operation of the several embodiments of appellant's apparatus by which this is automatically accomplished are described in detail on pages 1 to 4, inclusive, of the Examiner's Statement, Paper No. 14, to which reference is made.

139 The disclosures of the references relied upon by the Examiner are described at considerable length in his Statement, Paper No. 14, so that it will be necessary here to repeat only so much of those disclosures as are pertinent to the rejection of the claims.

Claim 1 stands rejected as unpatentable over either Bailey or Plimmer.

Bailey shows two forms of a machine for grinding piezo-electric crystals to a thickness that will give a predetermined frequency of vibration. In the form shown in Fig. 1 the vibrations of crystals being ground are imparted to a table on which they are supported and these vibrations are indicated visually on a frequency meter by suitable electrical apparatus which senses the vibrations of the table. When the crystals are ground to the point where the predetermined frequency is indicated on the meter the operator manually stops the motor which drives the grinder. In the second form shown in Fig. 3 means is provided for automatically cutting off the power to the grinder motor when the crystals have been ground to the point where they vibrate at the predetermined frequency.

Plimmer shows a grinding machine provided with means for stopping the feed of a grinding wheel toward the workpiece when the latter has been reduced to a predetermined size. The feed control means includes an arm 69 which carries an electromagnetic generator having an armature 101 presenting a diamond at one end which engages the grinding wheel when it reaches a predetermined point in its path of movement toward the workpiece. The vibrations of the diamond due to contact with the grinding wheel are transmitted to the armature 101 of
140 the electromagnetic generator 67 which sets in operation apparatus that stops the feed of the grinder wheel toward the work and causes it to be retracted.

The Examiner's position with respect to claim 1 is that except for the one word "diamond" in the expression "a diamond holding means" the claim is fully met by the Bailey reference and the recitation of the holding means as a "diamond" holder has no structural connotation in the claim. As to the Plimmer patent the Examiner considers the claim to be fully met in terms since the armature 101 of the electromagnetic generator 67 is a diamond "holding means" and the mechanism connected to and actuated by the armature 101 can be termed "a vibration indicator".

Appellant argues with respect to both Bailey and Plimmer that they are not concerned with the problem of grinding diamonds, Bailey being concerned with grinding piezo-electric crystals to predetermined thickness and Plimmer with stopping the advance of a grinding wheel to control the size of the workpiece. He argues at length that these references are so foreign to his concept of orienting a diamond for grinding along the grain that they are not proper references against the claim.

We find it unnecessary to discuss appellant's arguments in detail since it may readily be conceded that the Bailey and Plimmer patents are not directed to the problem with which appellant is concerned. However, it is a prerequisite of patentability that the language of a claim must differentiate inventively from the prior art. Claim 1 is so extremely

broad in language that it does not satisfy this requirement. We fully agree with the Examiner that the reference to a "diamond holding means" in the claim does not limit the claim to an apparatus for grinding diamonds. In our opinion the claim reads in terms on the Plimmer patent and does not distinguish patentably from the Bailey reference. The rejection of claim 1 is sustained.

Claims 7 and 46 were rejected as functional and indefinite in that they are in effect drawn to a single means and are of the type condemned in Ex parte Gilman, 1925 C.D. 144 and In re Gardner, 1909 C.D. 306.

Appellant contends that neither of these claims is drawn to a single means, it being his position that claim 7 calls for the combination of a dop holder and means for rotating the dop, while claim 46 is drawn to the combination of a tong and an indicator for indicating vibration of a dop. He argues that these claims do not cover all possible means for grinding diamonds but only such as have a dop which is controlled by vibration.

We think appellant's argument is sound in so far as claim 7 is concerned but we agree with the Examiner that claim 46 is drawn to a single element, namely, a tong. The fact that it is described as "a vibration indicating" tong and is said to be "for diamond cutting" does not avoid the fact that the only element recited in the claim is a "tong." Claim 7 is considered by us to recite a dop holder in combination with means for rotating the dop. The rejection of claims 7 and 46 as bad because drawn to a single means is sustained as to claim 46 but is not sustained as to claim 7.

Claim 7 was further rejected as unpatentable over Coleman. This patent shows a holder for a diamond to be ground and an electric motor for rotating the diamond relative to a grinding wheel for the purpose of ascertaining the direction of the grain of the stone. In the illustrative embodiment shown in Fig. 1 the frictional resistance exerted by the stone on the grinding wheel is measured by an indicator. When the resistance is greatest the stone is being ground along its grain. The patentee lists other physical characteristics that may be utilized to determine the

direction of the grain in a diamond, one of them being differences in sound produced. The Examiner's position in this rejection of claim 7 is that all of the structure positively recited in the claim is present in the Coleman patent, the distinctions over the reference device, if any, being purely functional.

We think the Examiner's position is correct. The motor 22 of Coleman is an automatically operating dop rotating means adapted to rotate the dop to the cutting grain position of the diamond in said dop relative to the cutting disc. There is nothing in the language of this claim that requires the automatic rotating means for the dop to stop when the diamond is oriented for grinding along the grain. The rejection of claim 7 as unpatentable over Coleman is sustained.

Claims 21, 43, 46, 49 and 50 were rejected as unpatentable over Coleman in view of Plimmer. The Examiner has stated his position with respect to these claims at length on pages 10 to 12, inclusive, discussing each claim individually and pointing out why the limitations relied upon by appellant to avoid the references are purely functional recitations of what appellant's device does rather than what it is.

Appellant's traverse of the rejection of these claims as well as the other claims on appeal is based on the contention that there is no
143 reference which really meets the spirit or underlying concept of his invention and that the Examiner is not justified in combining references to build up an anticipation. He contends that the Plimmer patent has no real pertinence, being merely a limit gauge for stopping a machining operation, and that transporting Plimmer's sizing device to the Coleman machine to stop rotation of the dop holder when the diamond is oriented for grinding along the grain is not suggested by the references.

We are of the opinion that the statement in Coleman that the grain of a diamond may be determined by "differences in sound produced" (page 1, column 1, lines 53 and 54 of the patent) would suggest to one skilled in the art that a vibration responsive means such as disclosed by Plimmer at 68, etc., in Fig. 11 could be substituted for the friction responsive means disclosed in Fig. 1 of Coleman without invention. As

we have already stated, the Examiner has discussed the individual claims in this group pointing out why they are not patentable over the references. We find no error in the Examiner's position with respect to claims 21, 43, 46, 49 and 50 as stated on pages 10 to 12 of his Statement, to which reference is made, and the rejection of these claims will be sustained.

Claim 51 was rejected as functional and indefinite because it merely states a result in so far as the control of the position of the cutting disc is concerned. If we understand the Examiner's position correctly, he believes that because the diamond is not a part of the machine the reference to control by means of vibrations of the diamond cannot be considered a proper structural definition of the machine and
144 renders the claim indefinite.

While the diamond is mentioned in this claim, it is not recited as an element of the machine but even if it were we see nothing objectionable under the facts of this case in the recitation of means responsive to the vibrations of the diamond for controlling the position of the cutting disc on its planetary axis since it is the vibration of the diamond which produces the control force. It is not readily apparent how else the control could be defined than by reference to the vibrations of the diamond. We do consider this claim indefinite, however, in that it does not coordinate the controlled position of the cutting disc with the grain of the diamond. This rejection of claim 51 is sustained.

Claim 51 was further rejected as not patentable over Jearum in view of Plimmer. Jearum shows a diamond grinder having a rotating cutting disc which travels in a planetary orbit as it rotates, it being stated in the patent that the relation of the direction of movement of the cutting surface with respect to the diamond is such that grinding occurs along the grain at least twice in each rotation of the cutting disc about its planetary axis. In this respect the Jearum device is like the form of appellant's device illustrated in Fig. 4. In the Jearum device the planetary movement is not stopped when the proper position for grinding along the grain of the diamond is reached. It is the Examiner's position

that no invention would be required to utilize a vibration responsive stop means such as shown by Plimmer for stopping Jearum's planetary movement when the diamond is properly oriented.

145 While it may be conceded that Jearum has no means to stop the planetary movement at a predetermined place, we are of the opinion that the means for controlling the position of the cutting disc on its planetary axis as broadly recited in claim 51 does not require that the planetary movement of the cutting disc be stopped at the proper position for grinding along the grain and, therefore, the mere addition of a control device such as shown by Plimmer for controlling some undesignated position of the disc of Jearum would be purely arbitrary and uninventive. This rejection of claim 51 is sustained.

Claim 53 was rejected as not patentably distinguishing from either Bailey or Plimmer. The only distinction between this claim and Plimmer is that it calls for the control being effected by vibrations of the workpiece whereas Plimmer's control is actuated by vibrations of the sensing diamond which contacts the cutting tool. The Examiner points out that broadly speaking Plimmer's diamond 102 is a workpiece. In the Bailey patent the crystals being ground are the workpieces and it is the vibrations of these crystals which control the cutting tool in Fig. 3 of the patent. We are not convinced by appellant's arguments that the Examiner's rejection of claim 53 was in error. While we do not agree with the Examiner's holding that the statement in the claim that the vibration responsive means is responsive to vibrations of the workpiece is not a positive and proper recitation of the claimed machine, we do agree with him that it does not patentably distinguish from the references and the rejection of claim 53 is accordingly sustained.

146 Claims 44, 45, 55, 59, 67 and 68 are drawn to a method of grinding diamonds in which characteristic vibrations are utilized to determine the proper position of the diamond relative to the grinding disc so that the grinding will be along the grains of the diamond. These claims were rejected as unpatentable over the "Diamond and Gem Stone Industrial Production" publication which discloses that it is old in this

art to orient the diamond according to sound characteristics in order to grind along the grain. The changes in sound pitch are, of course, due to variations in the vibrations as the diamond is revolved relative to the cutting disc.

Appellant argues that the publication does not teach that it is old to position a diamond relative to a tool by means of the characteristic sound emitted by the contact between the tool and diamond. The publication states, however, that "The real cutting of the stone is observed by a special sound. If this is not present the cutter knows that the stone 'does not run'." From this disclosure it seems obvious to us that the workman will vary the attitude of the diamond to the stone until the characteristic sound indicative of efficient cutting is heard. These claims distinguish from the method taught in the publication either by reciting that the vibration is detected automatically or by instrumentation rather than by ear. These are apparatus limitations that cannot serve to distinguish method claims from the prior art. The rejection of claims 44, 45, 55, 59, 67 and 68 is sustained.

Claim 56 is also a method claim and it was rejected as unpatentable over Bailey. In the Bailey method the crystals are removed when they produce vibrations of a predetermined frequency due to excitation by the grinding tool. According to the claim the workpiece is removed when the vibrations diminish. In view of Bailey's teaching that the character of the vibrations can be used as a guide for indicating the progress of the grinding we see nothing inventive in removing the workpiece whenever the nature of the vibrations indicates that the desired objective has been attained. The rejection of claim 56 is sustained.

Claim 58 was rejected as met by the patent to Coleman. We think this rejection is sound. The expression "remote observation" implies no more than looking from some distance at the device of Coleman while in operation. Also, observation of the tracings executed by marker 43 can be said to be "remote observation." Motor 22 exercises remote control of the diamond cutting since it rotates the stone relative to the cutting surfaces 1 and 4. This rejection of claim 58 is sustained.

Claims 58 and 68 were further rejected as not pointing out appellant's invention with the particularity contemplated by Section 4888 of the Revised Statutes. (Now 35 U.S.C. 112). The Examiner holds that these claims are drawn merely to a result. Appellant contends that they satisfy the requirements of the third paragraph of Section 112 and also Section 100(b) of the New Patent Act of 1952. Both of these sections must be read in the light of the second paragraph of Section 112 which requires that the claims must particularly point out appellant's invention. Ex parte Ball and Hair, 675 O. G. 5; In re Arbeit and La Burthe, 99 USPQ 123; ___ CCPA ____.

148 We agree with the Examiner that these claims merely state a desired result without describing how the result is accomplished and, in our opinion, they do not satisfy the requirements of the second paragraph of Section 112. This rejection of claims 58 and 68 is sustained.

We have carefully considered all of the arguments in appellant's main and reply briefs as well as those presented at the hearing but we are not convinced thereby that the Examiner erred in rejecting the claims on appeal.

The decision of the Examiner rejecting claims 1, 7, 21, 43 to 46, inclusive, 49, 50, 51, 53, 55, 56, 58, 59, 67 and 68 is affirmed.

/s/ Mark Taylor	)	
Examiner-in-Chief	)	
/s/ M. H. Friedman	)	Board of
Examiner-in-Chief	)	Appeals
(Acting)	)	
/s/ P. T. Dracopoulos	)	
Examiner-in-Chief	)	
(Acting)	)	

April 30, 1954

Mr. Lewis A. Siegel,
2877 Grand Concourse,
New York 58, N. Y.

ON PETITION FOR RECONSIDERATION

Appellant requests that we reconsider and reverse our decision of April 30, 1954 which affirmed the Examiner's rejection of claims 1, 7, 21, 43 to 46, inclusive, 49, 50, 51, 53, 55, 56, 58, 69, 67 and 68.

Appellant in his petition points out several instances where, in his opinion, our decision affirmed the Examiner's rejection of claims on grounds different from those relied upon by the Examiner. We cannot agree that such is the case. While we may in some instances have used different language than that employed by the Examiner in stating

171 the grounds of rejection and may have described the reference disclosures in a slightly different manner than the Examiner did, nevertheless, we relied upon the same references and the reasons stated by us were substantially the same as those advanced by the Examiner so that there was no such departure by us from the Examiner's position as to constitute a new rejection. In re Christensen et al., 1948 C.D. 356; 611 O.G. 8; 166 F. (2d) 825; 77 USPQ 108; 35 CCPA 1000. In re Cowles, 1946 C.D. 574; 70 USPQ 419; 591 O.G. 509; 33 CCPA 1236; 156 F.(2d) 551.

We have carefully reviewed our decision and appellant's main and reply briefs in the light of the arguments presented in the petition for reconsideration and find that for the most part the petition adds nothing that was not presented in appellant's briefs and fully considered by us at the time we rendered our decision. It is true, as appellant states, that in our decision we conceded that the Bailey and Plimmer references are not concerned with the same problem that appellant is concerned with, namely, the grinding of diamonds, but they both relate to the grinding art and their disclosures are sufficiently analogous that we do not think they can be ignored. In re Mariani, 1950 C.D. 61; 631 O.G. 613; 37 CCPA 740; 83 USPQ 308; 177 F. (2d) 293.

Appellant seems to admit that the prior art suggests the utilization of sound variations as an indication of whether a diamond is or is not being ground along the grain, but he denies that the references show or suggest the use of vibration characteristics as an indication of the

direction of grinding or as a means for controlling the cutting of a diamond, and he requests that we supply either an affidavit or a prior art
 172 citation upholding the right to treat sound and vibration as equivalent for the purpose of controlling diamond cutting.

In our decision we took the view that the changes in sound pitch are due to variations in vibration frequency so that in orienting the diamond by sound the workman is inherently also utilizing vibration characteristics as a means of indicating the proper position of the stone. We see no reason why we should furnish an affidavit that "sound" and "vibration" are correlated since this is common knowledge and is disclosed in any textbook on physics, for example, the text entitled "College Physics" by Kimball, copyrighted November 1923 by Henry Holt and Company of New York, New York, states on page 188 that "All sources of sound are vibrating bodies capable of setting up air vibrations." Since the patent to Coleman and the publication "Diamond and Gem Stone Industrial Production" of record in this appeal both disclose that sound may be used as a guide in orienting a diamond so as to be ground along the grain, we think they suggest the use of vibration as a guide for orientation.

We have reconsidered our decision but since we are not persuaded that the conclusions reached therein were in error the petition is denied as to making any change in the decision.

June 28, 1954

/s/ Mark Taylor	)	
Examiner-in-Chief	)	
/s/ M. H. Friedman	)	BOARD
Examiner-in-Chief	)	OF
	)	APPEALS
/s/ P. T. Dracopoulos	)	
Examiner-in-chief	)	
(Acting)	)	

Lewis A. Siegel,
 2877 Grand Concourse,
 New York 58, N. Y.

[Filed July 21, 1958]

**MOTION TO FILE THREE (3) SETS OF EXHIBITS
SEPARATE FROM APPENDIX**

Lewis A. Siegel, Appellant in the above-entitled case hereby moves that three (3) separate exhibits (sets of exhibits) be filed in the above entitled-case apart from the Appendix.

The grounds for this motion are as follows:

1. 1. The exhibits comprise some six or seven patents, and would be cumbersome in the appendix.
2. The exhibits comprise parts of books.
3. The cost of providing twenty five complete sets of exhibits would impose a very heavy financial burden on appellant in instant case, and possible preclude presentation of proper evidence before the Court of Appeals on which it might otherwise reach a decision not based on the true merits of the case.
4. Neither party will be prejudiced by granting of motion.

July 21, 1958
Washington, D. C.

Respectfully submitted,
Lewis A. Siegel,
Appellant Pro Se

Received this 21st day of July 1958

[Filed April 17, 1957]

**EXCERPTS FROM
BRIEF FOR THE DEFENDANT**

* * * * *

Plaintiff adduced as new evidence at the trial a book "Diamond Technology" by Paul Grodzinski. Plaintiff's purpose in putting this book (Plaintiff's Exhibit 4) in evidence, apparently, was to demonstrate that the author believed at the time he wrote the book (some twelve years after the date of the publication of Defendant's Exhibit E) that the actual polishing direction of a diamond must be determined by trial and error (Plaintiff's Brief, pages 44 and 45), and that there is no way to determine the cutting grain of a diamond by scientific measure (Plaintiff's

Brief, page 45). Grodzinski's comments in the later book would have no bearing on the anticipatory effect of his previous publication even if they were inconsistent with earlier statements. It is noted, however, that Grodzinski's statements in the later book, as reported by plaintiff, are consistent with his previous disclosure that a cutter observes when a stone "runs", or cuts with the grain, from its special sound. Such a procedure is "by trial and error"...

* * * * *

44 [Mailed Aug. 16, 1950]

DEPARTMENT OF COMMERCE Plaintiff's Exhibit
UNITED STATES PATENT OFFICE No. 1 - Paper No. 3
WASHINGTON

Lewis A. Siegel
2877 Grand Concourse
New York 58, New York

John A. Marzall,
Commissioner of Patents.
Division: 58-7114
Applicant: Lewis A. Siegel
Ser. No. 153,430
Filed April 1, 1950
For Vibration Variation Control

This application has been examined.

References made of record:

Schenkein et al	1, 166, 006	Dec. 28, 1915	51/229xr
Coleman	1, 168, 858	Jan. 18, 1916	" xr
Leperre	1, 458, 768	June 12, 1923	"
Jearum	2, 386, 687	Oct. 9, 1945	"
Spira (Br)	566, 078	Dec. 12, 1944	"
	(2 sheet dwg; 4 pages spec.)		
Indge	2, 282, 145	May 5, 1942	51/100/2

The Chief Draftsman has indicated that the drawings are informal because the lines are rough and blurred; figures must not contact the borderline; the word "by" is objectionable; shade lines are required; and the gears are poorly illustrated. New drawings are required, but need not be submitted until patentable subject matter has been found in the application. The present drawings are admitted for the purpose of examination.

Claims 2-5 inclusive, 8, 10-13, inclusive, 15, 17, 18, 20 and 25 are rejected as being indefinite functional and improper method claims. The claims are indefinite and functional in that they do not clearly point out the steps and means used in practicing the method. The claims are improper in that they define one step processes. In re Stack 1937 C.D. 230.

45 Claims 1, 8 and 16 are rejected as being fully met by any one of patents to Spira, Leperre and Schenkein.

Claims 2-6 inclusive, 10, 11, 13, 17, 18, 20 and 28 are rejected as being fully met by patent to Coleman.

Claim 19 is rejected as being fully met by patent to Jearum.

Claim 29 is rejected as not patentable over patent to Indge. The claim merely defines the grinding machine of Fig. 5, the reference to a diamond cutting machine being a statement of use.

There are more than one species of the generic invention of the vibration variation control used (1) to rotate the dop as in Fig. 1) (2) to raise the holder as in Fig. 2 and (3) to control the cutting disc as in Fig. 6.

Inasmuch as there is no patentable generic claim in the case, applicant is required to elect one species for prosecution in this case; Order 3527 of October 24, 1940. Applicant's response, to be complete under Order 3527, must include an election of species or a statement that in applicant's opinion all claims are, in fact, readable on a designated species which applicant must identify. Such statements will be considered as an election under the Order. Applicant should also include a listing of all claims restricted or generic to the elected species.

46 Upon allowance of a generic claim, applicant will be entitled to consideration of claims to the additional species disclosed, provided all the claims to the additional species are written in dependent form or otherwise include all the limitations of the generic claim as provided by Rule 141.

Claims 7, 9, 14, 15 and 21-27 inclusive are rejected on the ground of misjoinder of inventions.

Examiner

[Filed April 1, 1957]

EXCERPTS FROM
BRIEF FOR LEWIS A. SIEGEL

* * * * *

Attention is directed to page 1, lines 46--55

"As examples of the different physical effects which may be utilized or taken advantage of to ascertain the grain of a diamond may be mentioned; First, by variation in frictional resistance produced; second, by variation in temperature produced; third, by differences in luminous or sparking effects; fourth, by differences in sound produced; fifth, by differences in intensity of static electricity produced."

It is noted that Coleman enumerates a variety of effects which may be utilized to determine the correct position of the diamond, yet utterly fails to disclose means for so utilizing any of these effects except the variations in frictional resistance. Although applicant might, in accordance with the broader aspects of his invention, pick up the vibrations of the dop holder after they had been converted into sound, it should be noted that in the embodiments actually disclosed the microphone 2 rests upon the dop holder 1 and follows directly its vibrations, without the intermediary of an air cushion such as would be necessary if sound were the controlling factor.

Sound is only one of a variety of effects listed by Coleman without disclosure or even a suggestion of means for so utilizing his variety of effects.

Coleman attempted to utilize frictional resistance to determine the grain of a diamond in his patent No. 1,168,858.

The patent was in no way concerned with "variation in temperature" or "differences in luminous or sparking effects" or "differences in sound produced" or "differences in intensity of static electricity produced", there is no disclosure in the patent of a method or apparatus capable of utilizing these various effects as a matter of fact the patent does not even suggest to the man learned in the art any way of utilizing these physical effects, furthermore the patentee does not even suggest what will be measured to determine these various physical effects

although he measured torque of a fiction member 4 to determine frictional resistance of said fiction member.

In view of no suggested means of utilizing these various effects, they are no more than vague prophecies.

It is interesting to note that with so great a variety of physical effects, the Patentee did not mention vibration.

* * * * *

Plaintiff notes; Examiner claims Bailey can hold a diamond in some manner. Holding a diamond in some manner is not sufficient for cutting purposes because a diamond must be held in a fixed position with respect to its cutting grain direction. There are not facilities for so holding a diamond, on Bailey's invention.

Plaintiff would like to point out that Bailey's device must have a precut work piece having parallel faces, provided of course it has piezoelectric characteristics. Therefore, the reference to a diamond holder does structurally distinguish over the patent disclosure of Bailey's device. Bailey's device is so constructed and arranged that it will measure piezoelectric currents, and not vibrations of substance not capable of generating such currents. Therefore if Bailey could hold a diamond in his machine as Examiner suggest it lacks means for measuring vibrations of a diamond no matter how it is held.

Bailey's structure, function, result and method is in no way related to the structure, function and result and method of Plaintiff's process and apparatus.

The one is definitely for dimensions and control thereof and the other is for analyses and control of a work piece with regard to its internal structure.

* * * * *

PRIOR ART CITED BY THE PATENT OFFICE AND DROPPED

Attention is called to Plaintiff's Exhibits 2 and 3

Exhibit 2, E. F. A. C. Leperre	1, 458, 768	June 12, 1923
Exhibit 3, Schenkein & Lehmann	1, 166, 006	Dec. 28, 1915

Sections of the Leperre patent will illustrate this invention which was completely dropped by the Patent Office as an anticipation against Plaintiff's application. Attention is called to page 1 lines 16--19

"This invention has for its object automatically to separate the diamond from the stone at a desired moment and continuously to indicate the degree of progress of the cut.

Attention is called to page 2 lines 45--57

"To remove from the diamond a determined thickness the indicator 3 is set by turning the dial until the needle indicates the determined thickness. For example to remove a thickness of 0.3 mm. the dial is turned until the needle indicates 30, supposing the dial to indicate to 1/100th of a millimetre; in cutting, the needle approaches the point of contact at 0 and when the stone has been ground away to the extent of 0.3 mm. the contact is established and the apparatus is raised as hereinbefore described."

The Shenkein & Lehmann patent describes another DEPTH GAGE type of device that operates on the principle that the amount the diamond holding means lowers is an indication of the amount the diamond is being diminished in size or the progress in grinding the facet of a diamond. Attention is called to page 2 lines 121--128 and page 3 lines 1--3

"No great skill is required to know if the facet is "running", the "dial test-indicator" acts as a grain finder in the respect that the hand on the indicator will quickly move if the facet is being ground; should the hand not move at all, all that is necessary is for the operator to turn the handle of the polishing head gradually, without removing the stone from the wheel, and the hand on the dial test-indicator will indicate as soon as the facet "runs".

PRIOR ART NOT CITED BY THE PATENT OFFICE

Attention is called to Plaintiff's Exhibit No. 5

C. J. Coleman 1, 313, 260 Aug. 19, 1919

The Coleman patent #1, 313, 260 is a DEPTH GAGE type of device similar to the Leperre and Schenkein & Lehmann patents above described that were dropped by the Patent Office as anticipations of Plaintiff's application for patent.

Attention is called to page 1 lines 24--29

"The machine being automatic, one attendant may operate or watch several machines at a time, so that not only is highly skilled labor unnecessary, but one attendant may do the work heretofore required of several."

Attention is also called to page 3 lines 15--20

"the pointer 54, which indicates on the dial 55 the amount of polishing that has taken place. The operator may thus tell not only how rapidly the polishing of any facet is proceeding, but also when it is nearly finished."

ERRONEOUS EXAMINERS STATEMENT

Attention is called to Defendant's Exhibit 1 Item G pages 2--4 lines 20 on page 2 to end of page 4 erroneous information underlined (continuous line) reference to erroneous information underlined (broken line),

"Applicant utilizes sound-producing features to control the apparatus as will be explained hereafter. A microphone 2 of any conventional character is mounted on the arm 1 and is connected in a circuit including a rheostat 34, a current such as a battery 10 and an ammeter 3. The needle and zero point of the ammeter are points of contact in an electric circuit from power source 39 which source feeds to the motor 4 when the switch 9 is appropriately set. The ammeter then is a relay in the main power circuit of the motor 4 when the switch 9 is appropriately set. The microphone circuit is so set that, when the diamond is being cut on the grain the characteristic sound given forth effects the microphone to allow enough current to flow in the relay circuit to cause the ammeter needle to separate from its zero point and to interrupt the power circuit of the motor, and the rotation of the dop ceases. If during the operation the cutting ceases due to a change of grain, the sound level lowers to such an extent that the microphone again introduces high resistance in the circuit to cause the needle to go back to its zero position where the motor circuit is reclosed and the rotation of the dop occurs until the correct grain in the diamond is again found.

The microphone relay may be alternatively introduced by opposite setting of the switch 9 into a power circuit of a solenoid latch 11E, Fig. 3. This latch may retain a cylinder 11B attached to the under side of arm 1 (Fig. 2) against the bias of lifting spring 11C when proper

cutting conditions exist. When they do not, as explained above, the microphone allows the relay 3 to close which energizes the solenoid of 11E to release the latch so that the spring raises the arm 1 and the diamond into in-operative position which is in effect a signal to the worker of such improper condition.

A further modification is illustrated in Fig. 4. Here a cutting disc 16, driven by motor 20 is mounted on a radial arm 21 carried by a shaft 22. Shaft 22 is driven by a motor 26, worm gearing 24, 25. An arm 1 like that described above holds a diamond in a dop 15 against the cutting disc 16. A microphone 2 is mounted on the arm and in a manner similar to that described above controls alternatively the rotation (i. e., its stopping and starting) or its lifting under the described cutting conditions. Here, however, the correct attack angle of the disc is obtained by planetating it around the axis of shaft 22. The diameter of the disc 16 should be at least two times that of the distance between the planetary axis A-A and the disc axis B-B so that the diamond may be continuously traversed upon the disc face without interruption when the planetary motion is utilized to position the cutting disc in proper location relative to the cutting grain of the diamond. I. e., to say, the disc 16 is planetated by motor 26 and its gearing until the microphone responds to the sound indicating cutting on the grain which stops the motor 26 as long as this desired condition persists or if switch 9 is repositioned and an incorrect sound condition exists, the lifter mechanism is released to lift the diamond from the cutting disc."

* * * * *

PLAINTIFF REFUTES, EXAMINER'S ALLEGATIONS, OR FUNCTIONALITY AND LACK OF DISTINCTION OVER PRIOR ART, AND ERRONEOUS CONSTRUING OF CLAIMS, WORDS, PHRASES, AND NOUNS.

Plaintiff illustrates his contentions above enumerated with regard to Claim 21, which is illustrative of many claims in this case and the handling of same by the Examiner.

"21. A diamond cutting and polishing machine comprising a diamond cutting disc on which the diamond bears, a dop holder for holding a dop which bears a diamond against said diamond cutting disc, a vibration indicating means

adapted to close an electric circuit to an electric motor which when energised rotates the dop held in said dop holder, to a position where cutting grain of diamond is presented to cutting disc causing increased vibration of dop holder which actuates vibration indicator which opens electric circuit to motor causing motor to stop rotation of dop and leaving diamond on cutting grain position against cutting disc."

Plaintiff has underlined NOUNS in above claim 21 which stand for structure, and in many cases a very specific type structure. There are nouns in the above claim that describe specific structure limited to a specific use.

In contrast to Examiner's finding of a "disc" in line 2, and a "holder" in line 3, and "indicating means" elsewhere in the claim, Plaintiff finds a "diamond cutting and polishing machine", and on line 2 "diamond cutting disc" and on line 3 "diamond", "dop holder", and "dop" besides "vibration indicating means" there are many more nouns which are the names of specific structure to be found in this claim.

The Examiner has taken the noun "diamond cutting disc" and cut out two thirds of the name of the tool and left only "disc" so that he could say "diamond cutting" is functional, however "diamond cutting disc" is a noun and is not to be divided in any manner inconsistent or out of context with claim.

The Examiner has taken the noun "vibration indicating means" and cut out "vibration" leaving only "indicating means" so he might refer to this as a recitation of the characteristic, having separated "vibration" he could call this functional.

The Examiner has taken the noun "dop holder" and cut that noun in half, leaving "holder" and "dop" as separate elements.

The Examiner has erroneously held "The term dop does not structurally define over any holder such as that shown by bar 101 or 103."

Having separated "dop" and "holder" a noun Examiner in speaking of holder claimed the recitation of its purpose not being structure.

The Examiner has applied a double standard in defining structure in Plaintiff's claims and defining the same structure in the prior art, whereas the Examiner has torn Plaintiff's "diamond cutting disc" to irrelevant immaterial pieces, he has treated the equivalent of Plaintiff's "diamond cutting disc" in the prior art in a different manner.

Attention is called to Defendant's Exhibit No. 1 Item G Examiner's Statement (Paper No. 14) page 7 lines 22--24

"The patent to Jearum in Fig. 4 shows a conventional diamond grinding disc 2 (called a skaif or skeif conventionally)"

Plaintiff notes that, "Diamond grinding disc" and "diamond cutting disc" are one and the same structure and are used in cutting diamonds by the abrasive method.

In regard to Examiner's erroneous holding in regard to the term "dop", Plaintiff finds in Funk and Wagnalls New "Standard" Dictionary of the English Language 1951 Dopl. dop: 2 dop, N A copper cup with a wooden handle, in which a gem is soldered to be held while being cut or polished.

A device so defined does distinguish over any element such as that shown by bar 101 or 103.

The term dop signifies so much structure and specific purpose for a specific type of material that it does define or distinguish over bar 101 or 103 which defines nothing. Dop covers the workholder itself, and 2 the type work it holds, and 3 the nature of the work done on the type work it holds.

Plimmer's element 101 or 103 whose structure, is not only unlike that of Plaintiff's invention but diametrically opposed in purpose and function. Since the noun "Dop" is a cup with a handle, for receiving a specific type workpiece, for a very specific operation to be applied to said workpiece, it is a very restrictive noun, one limiting in structure as well as function, therefore any claim with this noun must define over prior art not related to the purpose of diamond cutting.

A Dop-holder is a noun and is the name given to a tool for holding a dop, they are sometimes called a "Tong" or "Tang" in the diamond

cutting art.

The Examiner in referring to claim 21 speaks of "a narration of intended or desired action and not a recitation of structure that will necessarily produce the results." And so he held the claim functional.

Plaintiff points out that the functional statements in claim 21 follow structural elements and furthermore are a limitation on said elements, thereby further defining over the prior art.

Plaintiff would like to point out that in another light, "adapted to close an electric circuit" and "which when energised rotates the dop" also "to a position where cutting grain of diamond is presented to cutting disc" are only more elucidatory ways of saying "means for".

Severing structural and functional limbs from the body of a claim, may not allow the claim to stand before, even irrelevant prior art, however what is left of a claim after Examiner's lexicographic abortion may be irrelevant to Plaintiff's invention. Prior art has not been cited against Plaintiff's invention or to his claims intact, but only to what was left after a lexicographic abortion of Plaintiff's claims, which is inconsistent with Patent Office practice.

Examiner construed nouns, words, and phrases in claims before this court, out of context with the claim, and in a manner diametrically opposed to the claim as well as the very substance of Plaintiff's patent application before this court.

Examiner performed a lexicographic abortion of Plaintiff's claims which transcends Plaintiff's right to be his own lexicographer.

Plaintiff has listed above many structures in claim 21 which is a claim to a combination. Plaintiff finds in claim;

43. "dop holder", "dop", "vibration sensitive means", "switch means", and "motor".

46. "vibration indicating tong".

49. "a dop", and a "vibration indicator".

50. "dop holding means", and "vibration indicating means".

Claims 21, 43, 49, and 50 are combination claims with correlated structures followed by functional limitations to said structures which

further limit said claims, and help to distinguish and define over Coleman or Plimmer or Coleman in view of Plimmer.

Claim 46 is an article of manufacture and does not have to have two or more elements to be a statutory claim or define over the prior art since its structure and limiting function do so define and distinguish over the prior art.

Plaintiff has pointed out to the court in this Brief the only reference to "sound" in Coleman patent cited against this invention was a vague prophecie having nothing whatsoever to do with the Coleman patent in question.

Plaintiff has also pointed out to the court in this Brief Examiner's erroneous statement that this, the Plaintiff's invention was for sound control and dependent on sound level to function, however it has been explained in court and in this Brief that the invention was for control dependent on vibrations and not on audible sound, since most vibrations are not audible to the ear of man, notably a dog whistle, Plaintiff measures vibrations before they are converted to sound.

Attention is called to Defendant's Exhibit 1 Item G Examiner's Statement page 6 lines 2--3

"The vibration or pick-up device of Plimmer is not a sound-responsive device."

Plimmer is in no way concerned with the problem to which Plaintiff applied himself, the structure and function and result are not similar to Plaintiff's as a matter of fact Plimmer is diametrically opposed to Plaintiff's structure, function, and result.

The Patent Office Board of Appeals held Plimmer patent was not directed to problem with which Plaintiff is concerned.

Attention is called to Defendant's Exhibit No. 1 Item H page 4 lines 23--26

"We find it unnecessary to discuss appellant's arguments in detail since it may readily be conceded that the Bailey and Plimmer patents are not directed to the problem with which appellant is concerned."

However the Board of Appeals stated,

Attention is called to Defendant's Exhibit No. 1 Item H (Paper No.18)
page 7 lines 16 - page 7 lines 10--16

"We are of the opinion that the statement in Coleman that the grain of a diamond may be determined by "differences in sound produced" (page 1, column 1, lines 53 and 54 of the patent) would suggest to one skilled in the art that a vibration responsive means such as disclosed by Plimmer at 68, etc., in Fig. 11 could be substituted for the friction responsive means disclosed in Fig. 1 of Coleman without invention."

Plaintiff in this Brief illustrated this particular Coleman patent did not use sound it was only one of several vague prophecies, 2 Coleman did not measure the work-piece, 3 he measured only the frictional resistance of a friction member, 4 even this measurement was not taken while the diamond was being cut, and did not function during the cutting of a diamond.

Furthermore the inventor Coleman invented another machine for determining the grain of a diamond three years after the one cited by the Examiner and Plaintiff notes Coleman in his later patent did not even utilize any of the vague prophecies in the cited patent. So it would seem these vague prophecies did not suggest anything to the original inventor, besides the many that came after him since this patent is over 41 years old and has been in the public domain for some 24 years during which time any one was free to modify this paper patent so that it might work, and they did not find any suggestion therein of a way of transposing anything from Plimmer or any other machine for that matter that would make it work.

The Patent Coleman received some three years later was not cited by the Patent Office against Plaintiff's application for patent. Its structure and function was equivalent to other patents abandoned by the Patent Office against Plaintiff's invention as prior art. Coleman's latter patent which did not utilize any suggestions alleged to be in the early one is Plaintiff's Exhibit 5 C. J. Coleman Pat. No. 1,313,260 Aug. 19, 1919 and more fully described on pages 21--22 of this Brief. Anticipations abandoned by the Patent Office equivalent to above patent are Plaintiff's Exhibits 2 and 3.

Exhibit 2	E. F. A. C. Leperre	1, 458, 768	June 12, 1923
Exhibit 3	Schenkein & Lehmann	1, 166, 006	Dec. 28, 1915

described on pages 20 and 21 of this Brief.

Plaintiff has brought all this out merely to show that there are no suggestions in the prior art of doing what Examiner alleges is taught from the prior art.

There has been along felt want for a machine to eliminate the highly skilled worker in this field and many machines have been tried and many patents have been taken out for these machines, however no one looking at the prior art found Examiner's alleged suggestions therein.

It is with hindsight and in the light of Plaintiff's application before the Examiner that he would think there are suggestions of Plaintiff's invention in any patent he looked at.

However with all the prior art before the Examiner and Plaintiff's patent application before him, the best tangeable invention the Examiner could come up with, was a Hearing Aid.

Attention is called to Defendant's Exhibit 1 Item G Examiners Statement (Paper No. 14) page 12 lines 15--16

"Suppose, e. g., the operator were hard of hearing so that he would have to wear a conventional hearing aid which would be one form of instrumentation without inventive concept."

In regard to a hearing aid Plaintiff would like to state again his invention measures vibrations before they have been converted to sound, furthermore a hearing aid of type suggested by Examiner would not make sounds that were not already audible to man audible, the conventional hearing aid will not make the sound of a dog whistle audible to man, although any dog can hear a dog whistle without the Examiner's conventional hearing aid.

Plaintiff would like to point out that if the Examiner did transpose the sizing device of Plimmer in some manner to Coleman, he would effect a device equivalent to those already abandoned by the Patent Office which were sizing devices or depth gage mechanism at best, such as

Plaintiff's Exhibits 2 and 3 already described, if the Patent Office erred in citing sizing devices or depth gage apparatus against Plaintiff that were already in the diamond cutting field and for diamonds, the Examiner erres in trying to reconstruct devices outside the diamond cutting art to simulate diamond cutting machines abandoned as anticipations.

Since Coleman was not built to measure vibrations of a work-piece during cutting procedure or any other time, and does not suggest such measurement, the Examiner cannot reconstruct prior art to a structure and function diametrically opposed to inventors conception thereof of said machine.

Plaintiff would like to point out that the Examiner did not suggest how he could transpose Plimmer's sizing device to the Coleman machine, in respect to structure or function.

Claims 21, 43, 46, 49 and 50 rejected as unpatentable over Coleman in view of Plimmer.

21. A diamond cutting and polishing machine comprising, a diamond cutting disc on which the diamond bears, a dop holder for holding a dop which bears a diamond against said diamond cutting disc, a vibration indicating means adapted to close an electric circuit to an electric motor which when energised rotates the dop held in said dop holder, to a position where cutting grain of diamond is presented to cutting disc causing increased vibration of dop holder which actuates vibration indicator which opens electric circuit to motor causing motor to stop rotation of dop and leaving diamond in cutting grain position against cutting disc.

43. In an apparatus for grinding or polishing gems, in combination, a dop holder, a dop rotateable mounted in said dop holder, vibration sensitive means adjacent said dop holder, and switch means controlled by said vibration responsive means for energising said motor in response to said dop holder carrying out vibrations other than vibrations of a predetermined character.

46. As a new article of manufacture, a vibration indicating tong for diamond cutting.

49. In combination, a dop a vibration indicator, so constructed

and arranged to indicate degree of vibration of said dop.

50. A tong comprising dop holding means, vibration indicating means for indicating vibrations of said tong.

Above claims 21, 43, 46, 49, and 50 recite sufficient structure to produce the results required, in underlined elements of the claim, also each structure is followed with a recitation of operational limitation. The recited structure are names of specific means or elements of the combination. Furthermore clauses restricting said means to arriving at the desired result in a particular manner do not make a claim with sufficient structure to carry out the result functional. The above claims are for a valid combination and as such would not be invalid as functional, since, as stated in (Young v. Eick 113 O. G. 547) "The use of the word 'means' limited by a statement of function has long been recognized as the proper method of stating an element of a combination claim." Therefore Plaintiff's specific structure qualified the same way are more definite than a "means" claim.

A case appros Plaintiff's combination claims 21, 43, 46, 49, and 50 is (Ex parte Hild, 26 U. S. P. Q. 282)

"While a number of references have been cited by the Examiner, it is not understood that they are relied upon for anticipation of the structure claimed and the functions as well, but only for the structural elements definitely recited. We think it well settled that in a combination claim, and we think the claims are drawn to a combination, an element may be as well limited by a statement of function as by a statement of structure and that, to anticipate such a claim, it is essential that the references disclose the function as the structure. Claims have sometimes been considered functional where the structure included was insufficient to support a final statement of function; but where the functional statement is set forth as a limitation on an element, we are of the opinion that it is a proper limitation and requires a similar functional disclosure for anticipation."

Neither Coleman or Plimmer measure vibrations of the workpiece or do they suggest such measurement, nor would they together measure vibrations of the work piece used for their respective purpose.

In regard to any claim similar to claim 46 in that it may have a minimum of elements as an article of manufacture it is a statutory claim and is patentable, a case on all fours would be (Clark Blade & Razor Co. v. Gillette Safety Razor Co., 194 F.421 (CCA3) one of the claims in suit read:

"2. As a new article of manufacture, a detachable razor-blade of such thinness and flexibility as to require external support to its cutting edge."

Elias Howe (Howe v. Williams, 2 Fish Pat Case 3 No. 6, 778 7th. claim "grooved and eye pointed needle".)

The Coleman patent cited against Plaintiff's Invention grinds or cuts a diamond by continuously rotating the diamond with respect to the diamond cutting disc, so that its cutting grain is periodically alligned for a minute fraction of time in each rotation of the diamond. Coleman does not have means for determining the cutting grain of a diamond during the machining of said diamond, therefore the Board of Appeals rejected above claims on an erroneous premise.

* * * * *

REJECTIONS ON "DIAMOND AND GEM STONE INDUSTRIAL PRODUCTION"

Attention is called to Defendant's Exhibit 1 Item E Publication "Diamond and Gem Stone Industrial Production" by Paul Grodzinski, N. A. G. Press, Ltd., London, 1942, Page 90.

The only reference to sound in above Exhibit is on page 90 lines 15--17

"The real cutting of the stone is observed by a special sound. If this is not present the cutter knows that the stone 'does not run' ".

On the above vague observation of when a diamond is not being cut Claims 44, 45, 55, 59, 67 and 68 have been rejected.

The Examiner rejected the above claims on the publication because he held:

Attention is called to Defendant's Exhibit 1 Item G Examiner's Statement (paper no. 14) page 12 lines 10-13:

"Merely to substitute some unspecified form of 'instrumentation' for the ear of the operator would not involve invention".

The Board of Appeals conceded the above claims distinguish from method taught in publication by apparatus limitations.

Attention is called to Defendant's Exhibit 1 Item H Decision of Board of Appeals (paper no. 18) page 10 lines 21-24:

"These claims distinguish from the method taught in the publication either by reciting that the vibration is detected automatically or by instrumentation rather than by ear. These are apparatus limitations that cannot serve to distinguish method claims from the prior art."

Plaintiff contends his method does not involve, "some unspecified form of 'instrumentation' for the ear of the operator", in fact it does not involve anything for the ear of an operator as Examiner stated in statement above.

However a vibration indicator or vibration indicating means is essential to the improved results of Plaintiff's method which could not be produced by "a conventional hearing aid" suggested by Examiner. Attention is called to Defendant's Exhibit 1 Item G Examiner's Statement (paper no. 14) page 12 lines 15-18:

"Suppose, e.g., the operator were hard of hearing so that he would have to wear a conventional hearing aid 'which would be one form of instrumentation without inventive concept'."

Since the Board of Appeals held the above claims do distinguish over the Publication by apparatus limitation Plaintiff believes the following cases are pertinent; Previous claims with apparatus limitations was sustained by the Supreme Court in (Hoyt v. Horne 145 US 302) Pat. No. 303 Aug. 12, 1884 to John Hoyt.

"claim 1. The improvement in beating rags to pulp in a rag engine having a beater-roll and bedplate knives, consisting in circulating the fibrous material and liquid in vertical planes, drawing the same between the knives at the bottom of the vat, carrying it around and over the roll and delivering it into the upper section of the vat, substantially as described."

It was held in (Ex parte Nelson and Cosby 82 U. S. P. Q. 115):

"mere reference to certain instrumentalities in process claims in describing performance of certain steps does not render claims improper, but limits them and makes them more definite".

And in Ex parte Chester B. Sadtler (28 U.S.P.Q. 141):

"Examiners are allowing many method claims which are limited to use with particular types of apparatus and this is not improper."

And particularly in Miller (44 USPQ 542):

"Claims setting forth a series of steps which might be accomplished by various mechanism either automatically or partially hand operated are proper statutory method claims and not the function only of the specific device shown."

In as much as these claims distinguish over any alleged method taught in said publication, by apparatus limitation, Plaintiff requests a ruling by this Court that these are statutory claims, and thereby do distinguish and define over said publication.

Diamond and Gem Stone Industrial Production does not teach any method, disclose or even suggest any method or apparatus for utilizing vibrations to properly orient a diamond with respect to its cutting grain against a diamond cutting disc. There is a very negative statement, indicating the lack of a special sound if a diamond is not being cut, however there is no method suggested for sound or anything else to properly orient the diamond to effect that special sound.

Plaintiff finds in said publication, Attention is called to Defendant's Exhibit 1 Item E Publication "Diamond and Gem Stone Industrial Production" page 90 lines 5-13

"A large number of stones are bruted before grinding, so that the direction of the grain is more difficult to ascertain. Most of the stones are macles (twins). It is difficult to find the grain, and even in one surface several grains may be present. After a certain amount of grinding when the stone has lost its original form, it is nearly impossible to find the grain by control and observation alone. In these cases a trial method has to be applied by changing the position of the stone towards the wheel";

page 90 lines 18-21:

"The difficulties in finding the grain, in particular in the case of macles and the longer time taken in production, has led to the idea of avoiding cutting according to the grain by (a) an automatic equipment to change the grain";

Plaintiff finds in above publication, that:

- (1) "the direction of the grain is more difficult to ascertain"
- (2) "it is difficult to find the grain"
- (3) "in one surface several grains may be present"
- (4) "it is merely impossible to find the grain by control and observation alone"
- (5) "a trial method has to be applied"
- (6) "idea of avoiding cutting according to the grain"
- (7) "automatic equipment to change the grain"

Plaintiff notes in respect to No. 7, equipment to change the grain automatically is of type disclosed in Defendant's Exhibit 1 Item G, Jearum Pat. No. 2, 386, 687 and Defendant's Exhibit 1 Item B, Coleman Pat. No. 1, 168, 839 where Coleman finds it most "expeditious" to continually rotate the diamond so that it may periodically be properly aligned with respect to its cutting grain against the diamond cutting disc. And Jearum continually planetates the diamond cutting disc with respect to the diamond so that periodically the abrasive grains will flow in the proper direction with respect to the cutting grain of the diamond. However, during the cutting operation of a diamond both these machines lack any facilities for measuring vibrations, sound or frictional resistance. Jearum has no facilities to measure anything at any time or does his machine suggest it to the man in the art.

For an Examiner to take from between the seven statements listed at top of this page, found in cited publication the following, "The real cutting of the stone is observed by a special sound. If this is not present the cutter knows that the stone "do not run", and suggest that this publication teaches a method or suggests Plaintiff's method or apparatus is out of context from page 90 and diametrically opposed to the teaching of the book, wherein it states, "it is nearly impossible to find the grain by control and observation alone" also "a trial method has to be applied" and then goes on to teach "avoiding cutting according to the grain" and suggesting "automatic equipment to change the grain".

Plaintiff only can see in Examiner's preferred statement from publication, a suggestion that there is a special sound when the diamond is being cut, however Plaintiff fails utterly to find any suggestion as to how one might orient a diamond to bring about this "special sound", the statement suggesting a "trial method" in said publication is hardly any method at all and certainly not one that could possibly be a foundation for anticipation of claims describing a specific method and a specific type of instrumentation (vibration instrumentation) to make his method and apparatus effective, which is a far cry from publication "trial method".

Plaintiff has proceeded in a manner contrary to and certainly opposed to the teachings of the cited publication especially as listed on page 41 of this Brief 1 to 7 at top of page. This alone would indicate an invention was made, and proceeding contrary to the teachings of the prior art has always been indicative of invention.

The Examiner reading this publication in the light of Plaintiff's patent application might think he sees a good deal more than the publication teaches, Hind Sight is not an uncommon condition within the human race, now that it is done, it is very simple and every patent and any other publication would seem to suggest to the Examiner Plaintiff's invention no matter, if there is no similarity of structure, function or result, as long as there is a word or element that the Examiner can twist around beyond recognition or out of context from prior art, so long as he can anticipate Plaintiff's claims.

Plaintiff would like to point out that the author Paul Grodzinski never seen any method taught in his own book, or did he even recognize a suggestion of any method many years after he wrote the cited publication, as alleged by the Examiner because Paul Grodzinski wrote another book twelve years later.

Attention is called to Plaintiff's Exhibit 4 Book, by Paul Grodzinski, entitled "Diamond Technology", 1953.

Attention is called to Page Number XXXII, at the beginning of the book, Introduction to the Second Edition.

"It is now twelve years since the manuscript of the first edition of this work was completed, and in deciding to bring out a second edition, so much new material has been incorporated that it is virtually a new book and has therefore been given a new title 'Diamond Technology' ".

lines 15-19 same page,

"The work represents an attempt to apply accepted engineering principles to a branch of industry which for generations has depended upon the personal experience of highly skilled craftsmen. Even at the present time this principle still operates".

Plaintiff observes that in spite of the alleged methods, the Examiner thought were taught or suggested in "Grodzinski's" Early publication cited by the Examiner no one but the examiner so construed that prior publication because the cited Coleman patent is still a paper patent and the diamond cutting art has not changed and the alleged obviousness of Plaintiff's contribution could only be obvious to the Examiner after he went through Plaintiff's application, just some more hind-sight. After twelve years the same author, states in "Diamond Technology" page 167 lines 1-4:

"Grinding and polishing of diamond according to the methods considered both practical and efficient in gem grinding and tool grinding plants are probably quite similar to the methods applied several hundred years ago"

page 414 lines 12-17

"But there is no doubt that the present diamond factory and its organization is based on the general industrial tendency of the middle of last century. The only recent technical improvements were the introduction of the bruting machine after about 1880 and the sawing machine about 1900;"

It seems the author in a later book has made no reference to any methods disclosed or even suggested in the earlier book cited by the Examiner, it is obvious any alleged methods disclosed in the earlier book are imaginary and only seen when looking at the publication through Plaintiff's application for patent.

It is of interest to know that after twelve years the author alleged to have disclosed a method still teaches "trial and error" in his

latter book, in "Diamond Technology" pages 195 lines 20-21:

"the actual polishing direction must be determined by trial and error."

page 198 lines 9-10:

"By trial and error one direction of the two crystallographic axis lying in this plane was selected as the grinding direction".

page 397 lines 20-25:

"Experience has shown, however, that in some instances one or other of the preferred directions is not present in a particular stone, and therefore the optimum polishing direction, i.e., the direction in which the maximum material is removed in the shortest time, has to be found by trial and error."

page 599 lines 20-21:

"In general the diamond polisher can determine the orientation of a particular stone by trial and error".

Plaintiff contends that when the same author twelve years later advocates "trial and error" as a way for skilled men in an art to determine the cutting grain direction of a diamond which is equivalent to his suggestions in the earlier book cited by the Examiner, the Examiner most certainly erred in construing the first publication in the manner that he did. He construed a negative sentence out of context with said book and in a manner diametrically opposed to the teachings of the book, namely "Diamond and Gem Stone Industrial Production" Defendant's Exhibit 1 Item E.

Paul Grodzinski in his new book "Diamond Technology" teaches there is no way to determine the cutting grain of a diamond by scientific measure. Attention is called to Plaintiff's Exhibit 4 "Diamond Technology" page 177 lines 29-31:

"Moreover, there is no scientific measure for the degree of 'running' in relation to the amount abraded off since great variations with different diamonds exist'."

From the above it would seem that the Plaintiff proceeded counter to the teachings of the prior art, and certainly contrary to the teachings of "Diamond and Gem Stone Industrial Production".

Moreover, it was held in the case of (Lyon v. Bausch & Lomb Optical Co., District Court, WD New York No. 4168 Decided Dec. 31, 1953):

"In determining whether prior scientific article disclosed instant method, it is significant that author thereof was still advocating use of inferior method at time patentee discovered instant method ten years after publication of article; also, if article disclosed instant method, it is strange that author did not use it."

In regard to anticipation by publication it has been held in (National Electric S. Co. v. United Wireless Tel. Co., 189 Fed. 727):

"A description which is insufficient to support a patent cannot be relied upon as an anticipation. Unless the prior publication describes the invention in such full, clear and intelligent term as to enable persons skilled in the art to comprehend it, and reproduce the process or article claimed without assistance from the patent, such publication is insufficient as an anticipation."

Since there is not any method taught in Defendant's Exhibit 1 Item E Publication "Diamond and Gem Stone Industrial Production" by Paul Grodzinski and no description or disclosure of any method or apparatus in this publication, Plaintiff prays for a ruling by this Honorable Court that claims 44, 45, 55, 59, 67 and 68 are not anticipated by the publication "Diamond and Gem Stone Industrial Production" by Paul Grodzinski.

* * * * *

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PLAINTIFF'S EXHIBIT NO. 1
PAPER NO. 15

IN THE UNITED STATES PATENT OFFICE
Before the Board of Appeals
Appeal No. 36619

Applicant: Lewis A. Siegel
Ser. No.: 153430
Filed: April 1, 1950
For : Vibration Variation Control
Div. : 58 Room 7114

APPEAL

REPLY TO EXAMINER'S STATEMENT

Hon. Commissioner of Patents,
Washington 25, D. C.

Sir:

In view of the new grounds of rejection, namely,

1. Page 12 lines 3 to 4 "The term dop does not structurally define over any holder such as that shown by bar 103 or 101" Examiner refers to Plimmer Patent No. 1891777.

2. Page 2 lines 19 to 21 "Applicant utilizes sound-producing features to control the apparatus as will be explained hereafter." Page 3 lines 2 to 15 "The microphone circuit is so set that, when the diamond is being cut on the grain the characteristic sound given forth affects the microphone to allow enough current to flow in the relay circuit to cause the ammeter needle to separate from its zero point and to interrupt the power circuit of the motor, and the rotation of the dop ceases. If during the operation the cutting ceases due to a change of grain, the sound level lowers to such an extent that the microphone again introduces high resistance in the circuit to cause the needle to go back to its zero position

133 where the motor circuit is reclosed and the rotation of the dop occurs until the correct grain in the diamond is again found." Page 4 lines 19 to 26 "I. e., to say, the disc 16 is planetated by motor 26 and its gearing until the microphone responds to the sound indicating cutting on the grain which stops the motor 26 as long as this desired condition persists or if switch 9 is repositioned and an incorrect sound condition exists, the lifter mechanism is released to lift the diamond from the cutting disc."

In regard to the first new ground of rejection concerning the term dop, applicant finds in Funk and Wagnalls New "Standard" Dictionary of The English Language 1951 Dop: 2 dop, N A copper cup with a wooden handle, in which a gem is soldered to be held while being cut or polished.

A device so defined does distinguish over any element such as that shown by bar 101 or 103. Dop distinguishes over Plimmers element in following:

<u>Dop</u>	<u>Plimmer's element 101 or 103</u>
1. Holds workpiece.	1. Holds tool.
2. Workpiece adjustable held.	2. Tool fixed thereto.
3. Workpiece subject to cutting or polishing.	3. Holds tool for treating workpiece.
4. In diamond cutting art.	4. In machine tool art.

The term dop signifies so much structure and specific purpose for a specific type of material that it does define or distinguish over bar 101 or 103 which defines nothing. Dop covers the workholder itself. 2. The type work it holds. 3. The nature of the work done on the type work it holds.

Plimmers device and particularly element 101 or 103 whose structure, is not only entirely unlike that of applicants invention but diametrically opposed in purpose and function, having in view an object entirely different from applicants invention and providing a function entirely foreign to his.

In regard to the second new ground of rejection, the substance of which is that applicants invention is one of sound level control. Applicant has reviewed the drawings, the specification and the claims in this case for the last three years and does not find any reference to sound therein. However applicant did find, in his amendment dated February 12, 1951 on page 7 lines 18 to 23, "Although applicant might, in accordance with the broader aspects of his invention, pick up the vibrations of the dop holder after they have been converted into sound, it should be noted that in the embodiments actually disclosed the microphone 2 rests upon the dop holder 1 and follows directly its vibrations, without the intermediary of an air cushion such as would be necessary if sound were the controlling factor".

In embodiments disclosed sound is not a controlling factor, and should not anticipate an invention which works far better without said sound.

Applicant requests a supplementary Examiner's Statement in view of the new grounds of rejection, with the following paragraph:

"In view of the new ground of rejection appellant has sixty days within which he may file a reply to this answer. Such reply may include any amendment or material appropriate to the new ground and may request remand to the Examiner to consider such amendment or material."

Respectfully submitted,

/s/ Lewis A. Siegel
Applicant

Dated: June 1, 1953
Bronx 68, New York

* * * * *

CIVIL DOCKET
UNITED STATES DISTRICT COURT FOR THE DISTRICT
OF COLUMBIA [Case Closed]

Date	Proceedings
1954	
July 12	Complaint, appearance - Deft. served 7-12-54; U. S. Atty. served 7-12-54
"	Summons, copies (1) and copies (1) of Complaint issued Atty. Gen. served 7-19-54
July 28	Answer of deft. to complaint; C/M 7-27-54; app. of E. L. Reynolds filed
July 28	Calendered (N)
1956	
Nov. 15	Hearing begun and concluded; taken under advisement (briefs to be presented) Rep.: C. MacReynolds. Curran, J.
1957	
April 1	Brief of Pltff. filed
April 17	Brief of the deft. filed.
May 31	Reply Brief of pltf. filed.
June 28	Transcript of proceedings of 11-15-56; pp. 1-83; (Rep. Chloe S. MacReynolds.) filed.
Nov. 26	Opinion of the Court. Finding for deft. (Judgment to be signed) Curran, J. (N)
Dec. 4	Appearance of H. S. Miller, U. S. Patent Office, Room 1039 as atty. for deft. filed
Dec. 4	Judgment dismissing complaint with costs vs. pltff. Curran, J. (N)

DATE	PROCEEDINGS	[Continued]
1957		
Dec. 13	Motion of plttf. for a judgment N. O. V. or in alternative for new trial, ser. ack. 12-13-57; P&A; M. C. 12-13-57. filed	
1958		
Jan. 16	Order overruling motion for judgment N. O. V. or alternatively for a new trial. (by direction) Curran, J.	
Jan. 21	Order denying plttf's. motion for judgment NOV or in the alternative for a new trial. (Signed 1-20-58) Curran, J. (N)	
Jan. 28	Exhibit of deft. returned to Mr. A. H. Behrens, Patent Office, filed.	
March 14	Order extending time to file appeal 30 days. Curran, J. (N)	
April 14	Exhibits of plttf. Nos. 1, 2, 3, 4, 5, and 6. - filed	
April 14	Exhibit #1 of deft. - filed	
April 14	Notice of appeal of plttf; Deposit by Siegel, \$5.00. (Copy to Moore) filed	
April 14	Record on appeal Delivered. Original file, ; 50¢ deposit by Lewis A. Siegel.	
April 14	Order transmitting original papers, exhibits & transcript to Court of Appeals. Micro. 4-15-58 Curran, J. (N)	
April 14	Order setting cash deposit of \$175.00 in lieu of bond. micro. 4-15-58 Curran, J. (N)	
April 16	Cash deposit by plttf. of \$175.00 in lieu of bond as per order of 4-14-58. - filed.	

APPARATUS CLAIMS ALLOWED

15. In combination a dop holder and means for supporting same, a vibration indicator adjacent said dop holder, a cutting-disc rotateable relative to said dop holder, a planetary drive for rotating said cutting disc and, and energizing circuit for said drive means responsive to the output of vibration indicator.

42. In an apparatus for grinding or polishing gems, in combination, an abrasive disc, a dop, a dop holder supporting said dop for maintaining a gem held by said dop in contact with the surface of said disc, a planetary drive for changing the position of said disc relative to said dop holder, first motor means for rotating said disc, second motor means for operating said planetary drive, vibration responsive

means adjacent said dop holder, and switch means controlled by said vibration responsive means for energizing said second motor means in response to the degree of said vibrations departing from a predetermined value.

--47. In combination, a dop, a dop holder supporting said dop, electric means for rotating said dop in said dop holder, and means responsive to vibrations of said dop holder for controlling the current supplied to said electric means and thereby, the extent of rotation of the dop in said dop holder. --

--48. An apparatus for grinding or polishing gems, comprising a holder, a dop mounted at one end thereof and adapted to hold a gem to be ground, a lifting means connected thereto for lifting said holder, vibration responsive means connected to said holder and responsive to vibrations of said holder for controlling said lifting means. --

--52. In combination, a dop, a dop holder supporting said dop, means for rotating said dop in said dop holder, and means responsive to vibrations of said dop holder for controlling first said means and, thereby, the extent of rotation of the dop in said dop holder. --

--54. In a diamond cutting machine, a cutting disc rotatable relative to work piece, a vibration indicator adjacent work piece, a planetary drive for rotating said cutting disc, and an energizing means for said drive responsive to the output of said vibration indicator. --

--60. In an apparatus for grinding or polishing diamonds, in combination, diamond supporting means, grinding tool means normally adjacent said diamond supporting means so as to operate upon a diamond held by said supporting means, vibration responsive means adjacent said diamond supporting means, switch means controlled by said vibration responsive means, and mechanism actuated by said switch means for separating said tool means and said supporting means from each other upon the degree of vibrations departing from a predetermined value. --

--61. In an apparatus for grinding or polishing gems, in combination, an abrasive cutting tool, gem holding means, mechanism for

rotating said gem holding means with respect to said cutting tool to align the grain structure of a gem held by said gem holding means with the direction of movement of the abrasive on said tool, and vibration responsive means controlling the operation of said aligning mechanism in accordance with the degree of vibrations executed by said gem holding means. --

--63. In an apparatus for grinding or polishing gems, in combination, a dop, a dop holder supporting said dop, an abrasive cutting disc, mechanism for rotating said dop holder with respect to said cutting disc to align the grain structure of a gem held by said dop with the direction of movement of the abrasive on said disc, and vibration responsive means positioned adjacent said dop holder, said vibration responsive means controlling the operation of said aligning mechanism in accordance with degree of vibrations executed by said dop holder. --

--65. An apparatus for grinding or polishing gems, comprising a holder, a dop rotatable mounted at one end thereof and adapted to hold a gem to be ground, a motor, means connected between said motor and said dop to rotate the latter, an electrical circuit for said motor, and vibration responsive means in said circuit adapted and arranged to interrupt said circuit during vibrations caused by the grinding of said gem and to complete the circuit upon the cessation of such vibrations, whereby the dop will always be rotated to its proper gem grinding position. --

--66. In an apparatus for grinding or polishing gems, in combination, a cutting disc, a dop holder displaceable relatively to but normally adjacent said cutting disc for maintaining a gem in contact with said disc, vibration responsive means adjacent said dop holder, switch means controlled by said vibration responsive means, and mechanism actuated by said switch means for removing said dop holder from said cutting disc upon the degree of vibrations diminishing. --

METHOD CLAIMS ALLOWED

--57. The method of grinding a gem with the aid of a rotating tool having an abrasive surface which comprised urging said gem against said surface, measuring by instrument vibrations executed by said gem

in response to excitation by said abrasive surface, and rotating said gem with respect to said surface upon the degree of vibrations departing from a predetermined value. --

--62. The method of grinding a gem with the aid of a planetary adjustable rotating tool having an abrasive surface which comprises urging said gem against said surface, measuring by instrument vibrations executed by said gem in response to excitation by said abrasive surface, orienting said planetary rotating tool having an abrasive surface with respect to said gem, and stopping so orienting means upon vibration reaching maximum degree. --

--64. The method of aligning the direction of flow of abrasive grain on a gem cutting tool with the direction of the cutting grain of a gem which comprises the steps of applying said gem against said tool, measuring by instrument vibrations executed by said gem, and rotating said cutting tool with respect to said gem to a position in which said vibrations are maximum. --

J. A. 98

Plaintiff's Ex. 1
Page 40

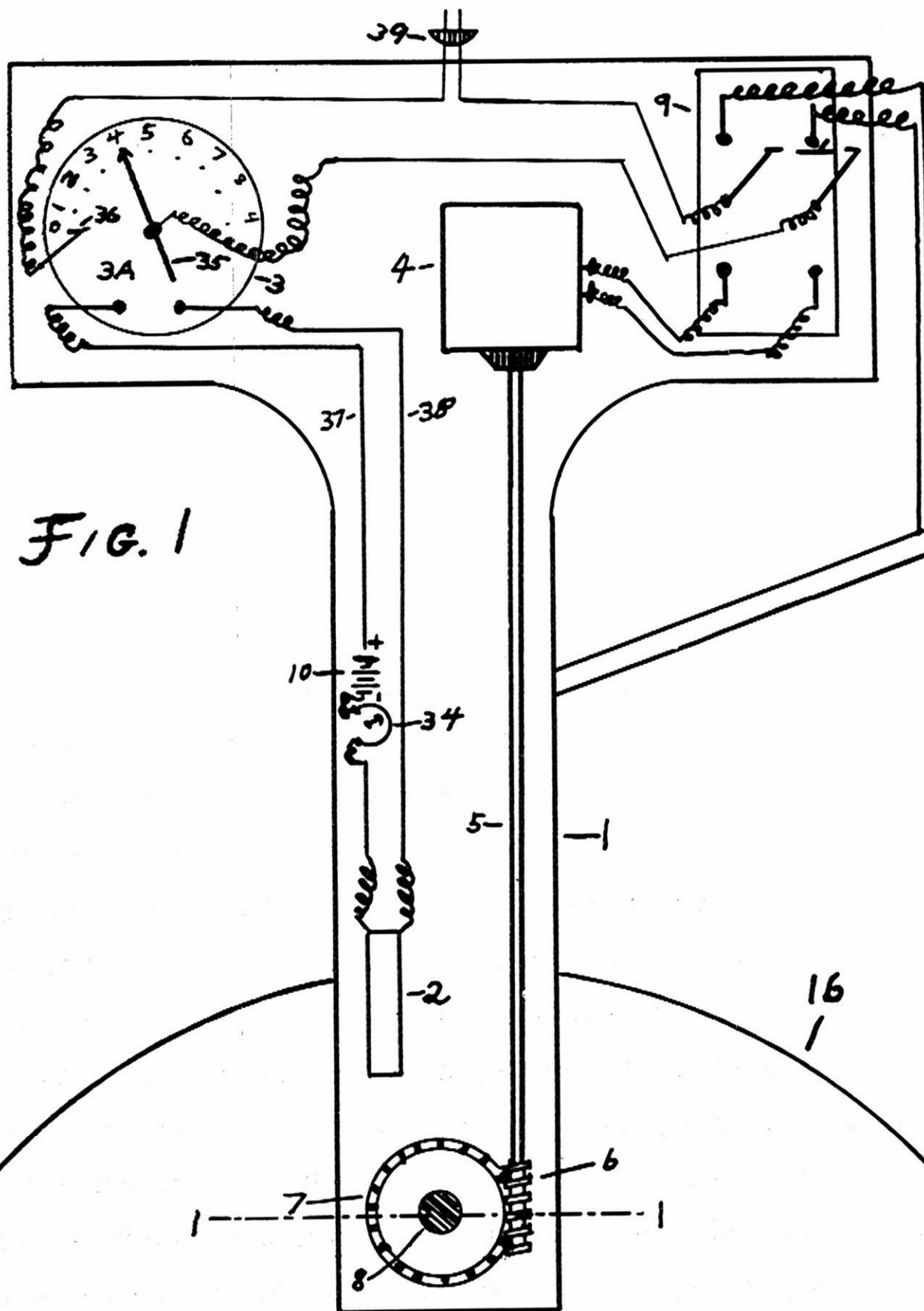


FIG. 1

INVENTOR.
Levin A. Siegel
BY

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Plaintiff's Ex. 1
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FIG. 2

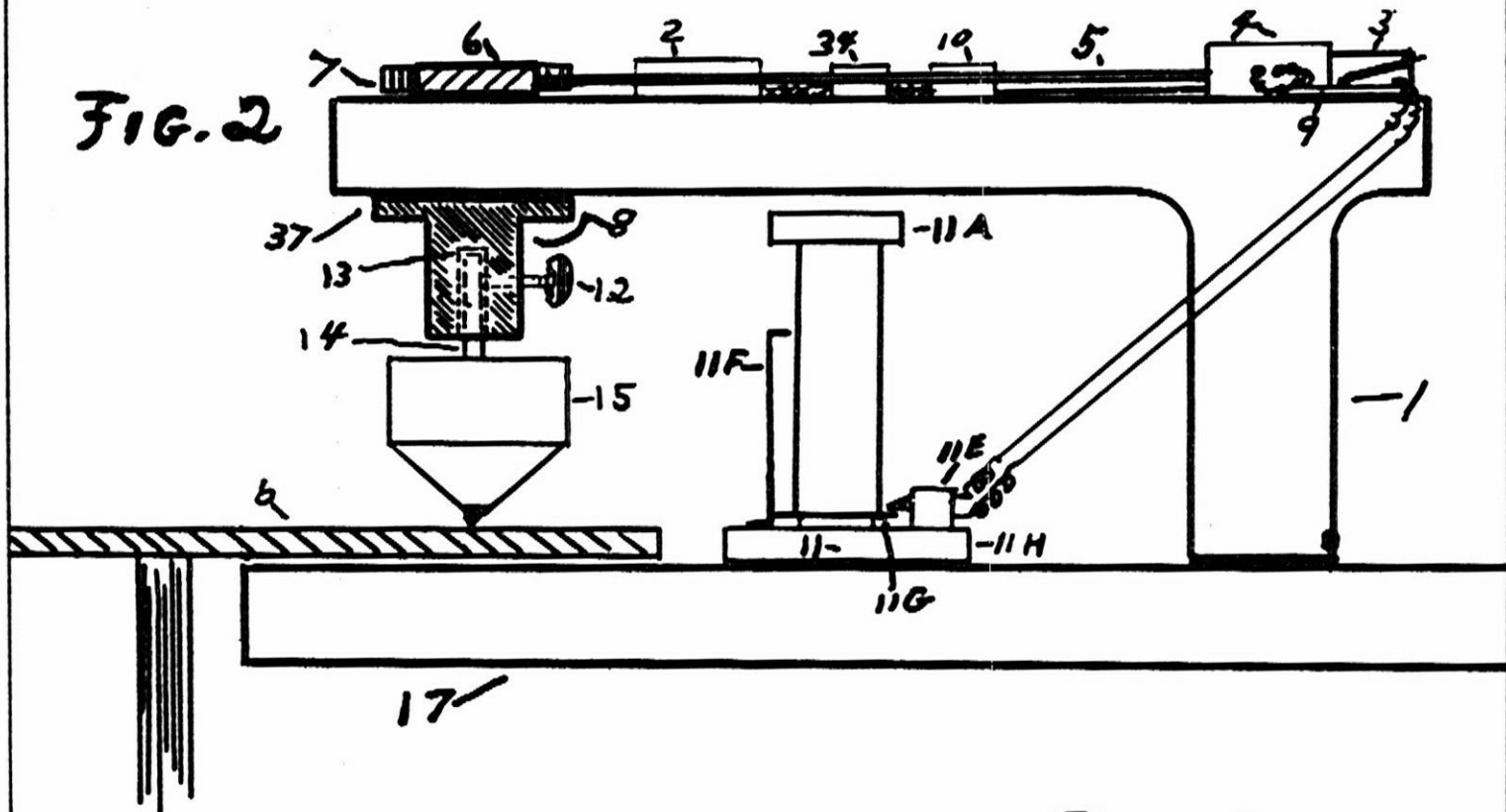


FIG. 4

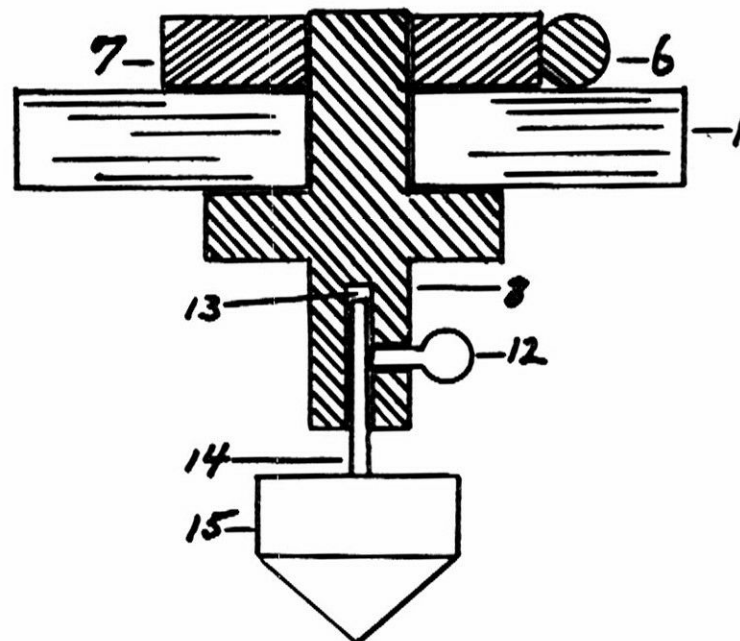
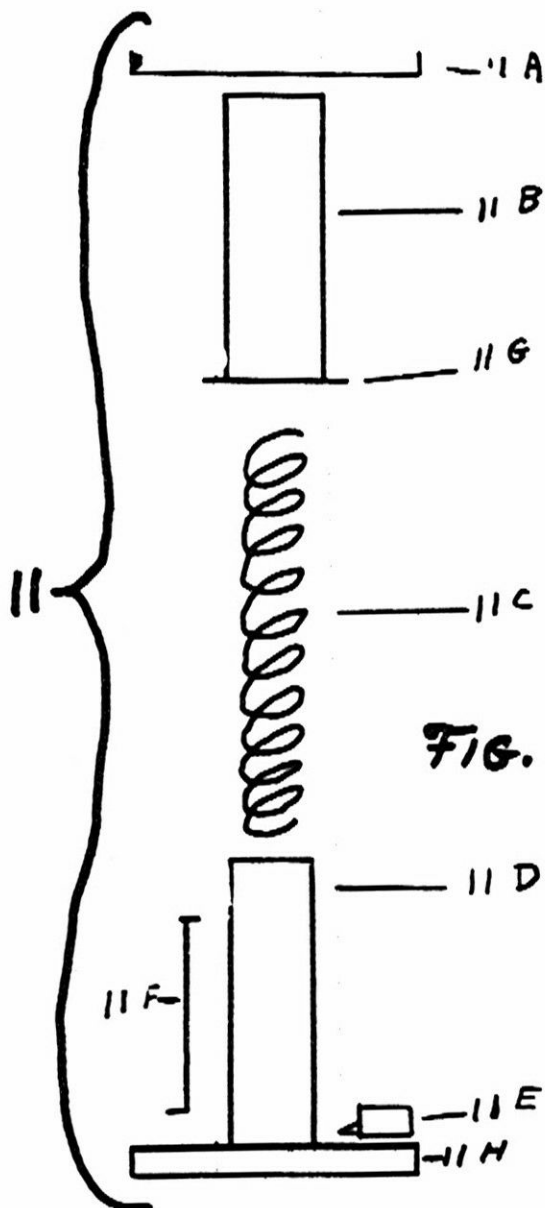


FIG. 3



INVENTOR.

Lewis A. Siga
BY

J. A. 100

Plaintiff's Ex. 1
Page 42

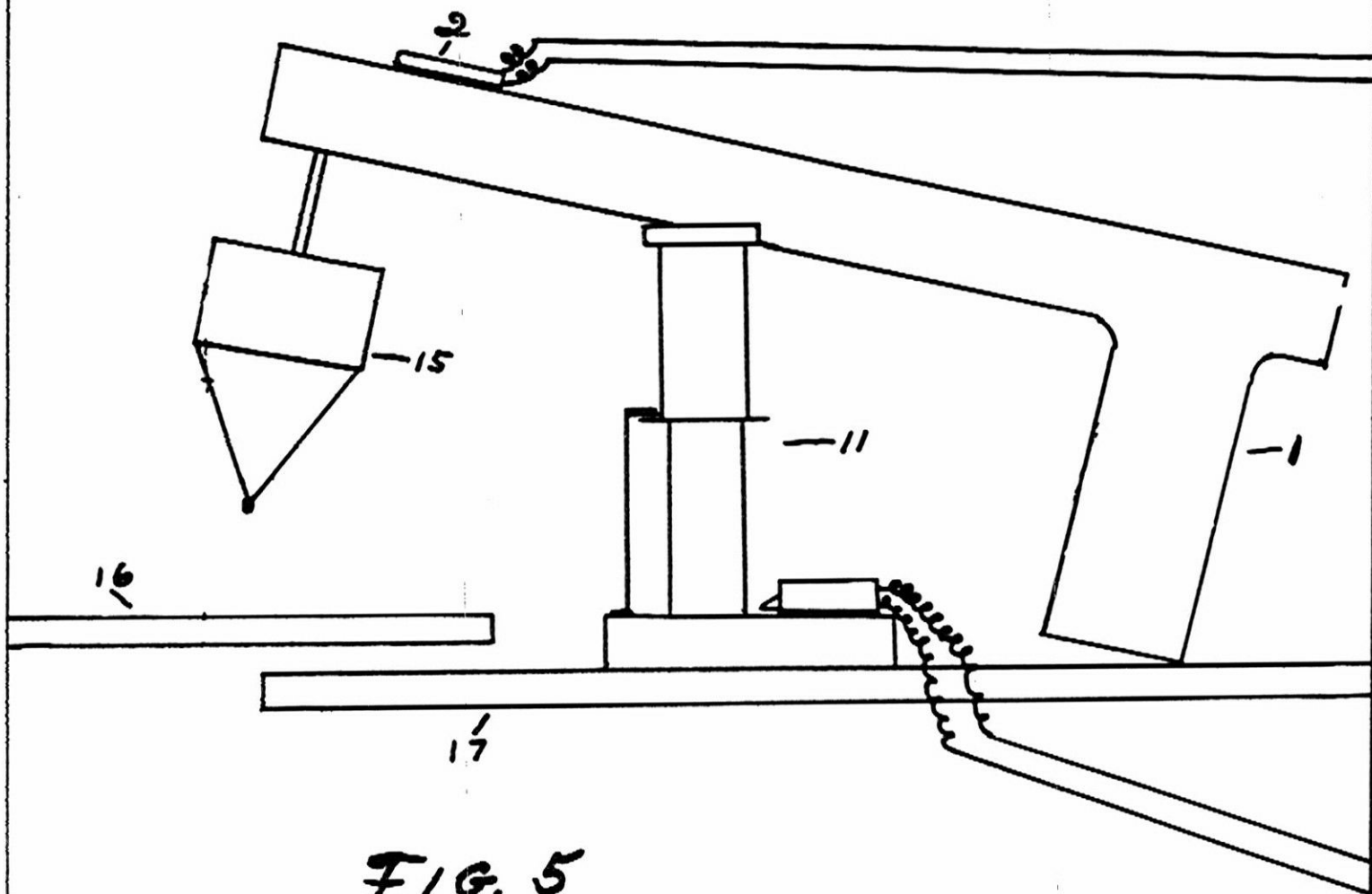


FIG. 5

INVENTOR.
Lewis A. Seigel
BY

ATTORNEYS.

J. A. 101

Plumbar's Ex. 1
Page 43

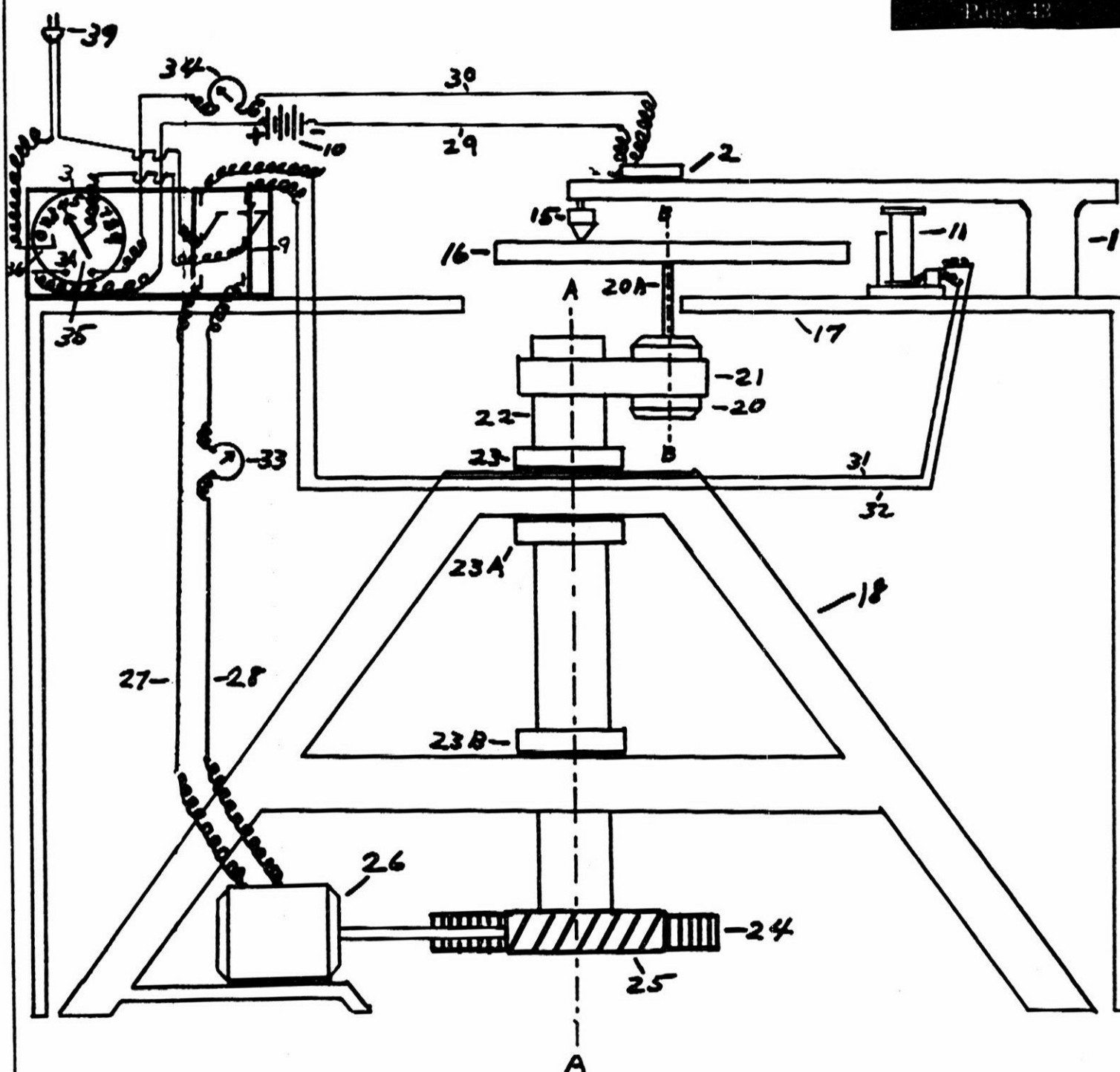


FIG. 6

INVENTOR.
Lewis A. Sigal
BY

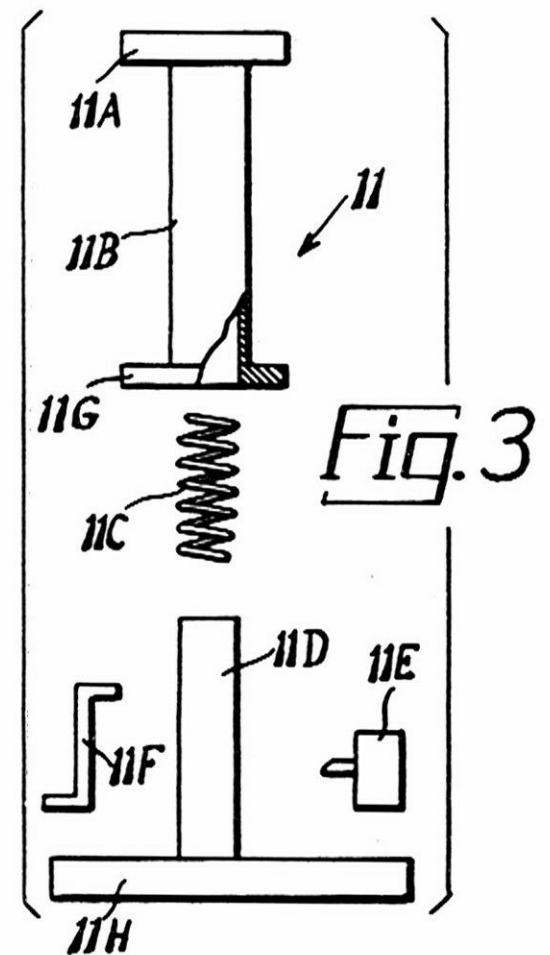
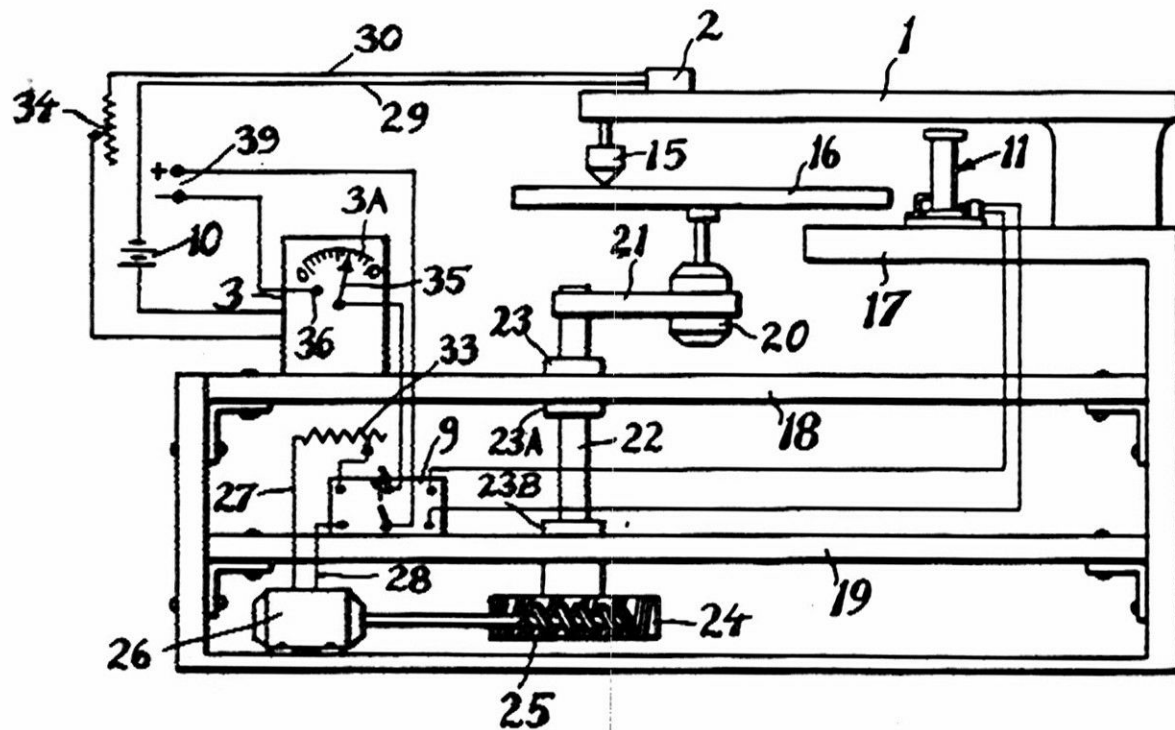
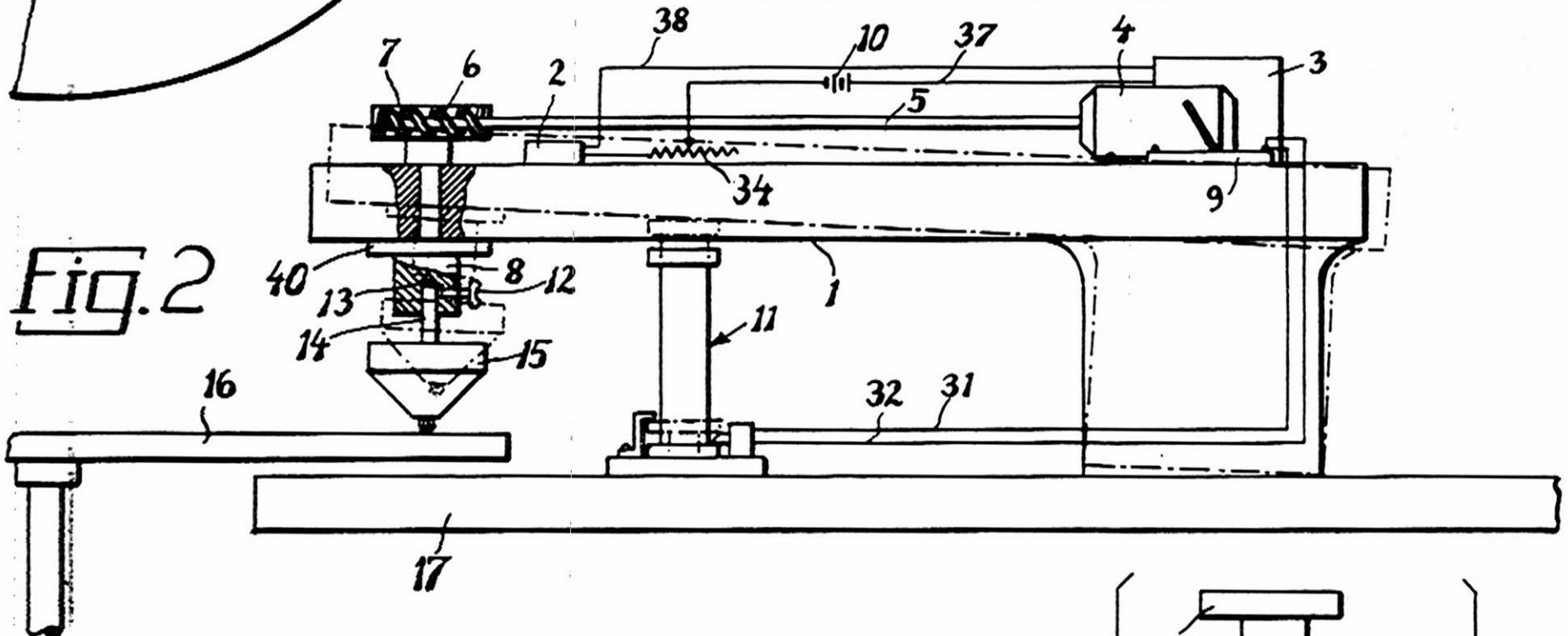
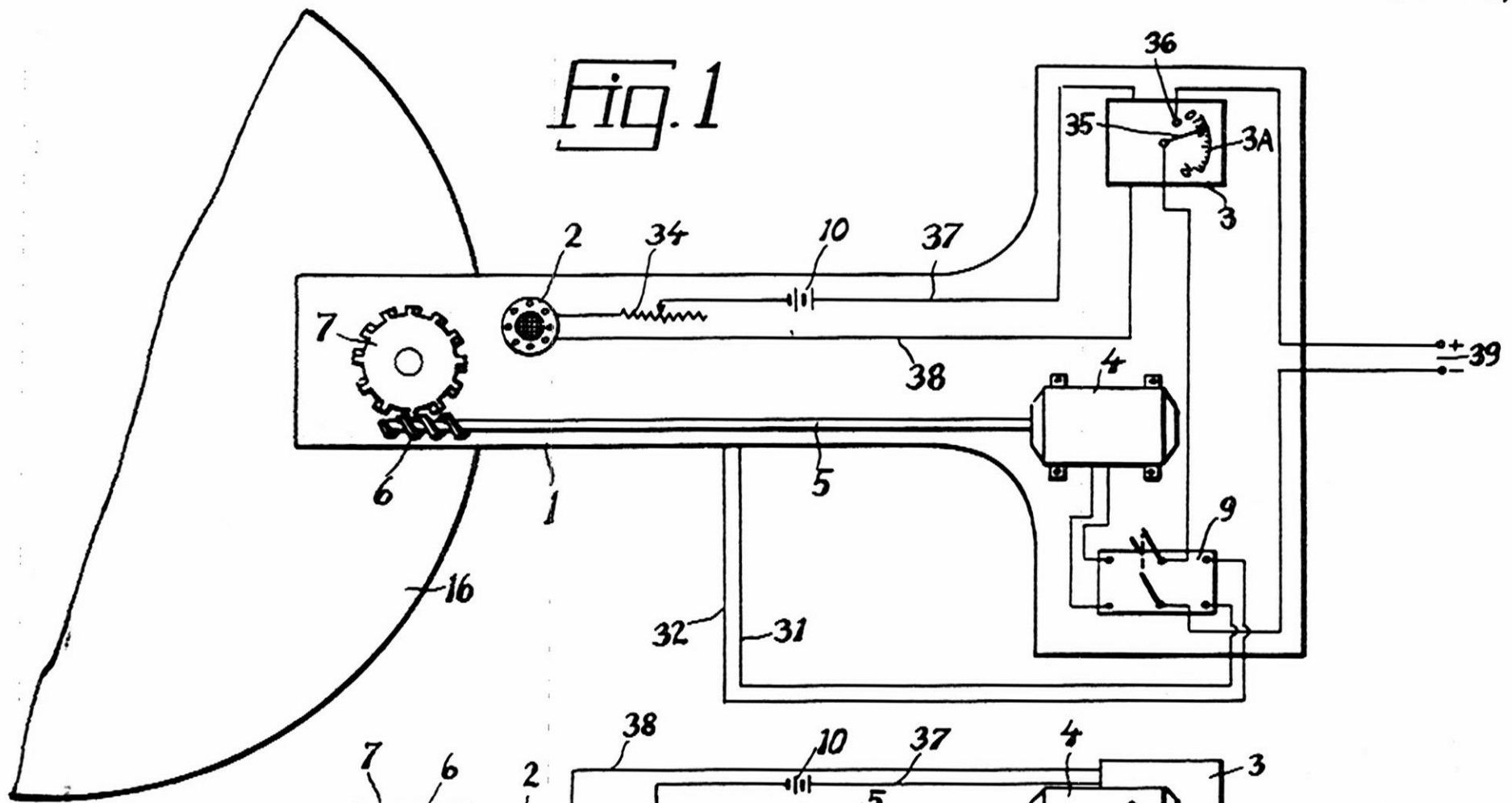


Fig. 3

